JUN 7 1944

PAPER TRADE JOURNAL

JUNE 1, 1944

Established 1886

Public Opinion

"Public opinion wins wars—that is as true now as ever."
GEN. EISENHOWER

In the present world conflict, public opinion, as Gen. Eisenhower suggests, has an incalculable potency as a war weapon.

Nothing is, or has been, as potent as paper as a medium through which public opinion is expressed and becomes a universally vital force. Without it, the vigorous public opinion of today could hardly exist.

Pulp and Paper are doing a job of first magnitude in every phase of the national effort now; and the Industry may be depended upon to continue doing its utmost in war and peace.

GOTTESMAN & COMPANY

— INCORPORATED —

WOOD PULP

22 EAST 40th STREET NEW YORK 16, N. Y.

EUROPEAN OFFICES: Birger Jarlsgatan 8, Stockholm, Sweden

REPORT OF SUPERINTENDENTS' CONVENTION

DOWNINGTOWN · DOWNINGTOWN · DOWNINGTOWN ·

PAPER TRADE JOURNAL

Title Reg. U. S. Pat. Off.
Established 1872

Volume 118 Number 22

Published every Thursday by Lockwood Trade Journal Co., Inc.

Executive and Editorial Offices: 15 W. 47th St., New York 19, New York, U. S. A.

Tel. BRyant 9-0860 New York 19, N. Y.

GEO. S. MACDONALD
President
ARTHUR E. GORDON
Executive Vice-Pres.
JOSEPH P. HORGAN
Secretary
GEO. E. LOCKWOOD
Treasurer
HENRY J. BERGER
Editor
STILLMAN TAYLOR
Associate Editor
R. G. MACDONALD
"TAPPI" Editor
LYNN M. LAMM
Washington Correspondent
All of 15 W. 47th St.

Western Representative:
H. K. VINTON
123 West Madison St., Chicago, Ill.

Subscriptions: (Payable in advance) By the year $4.00; Single Copy 10 cents.

Postage Extra: To Canada $2.00; To Other Foreign Countries $3.50.

Member Audit Bureau of Circulations

PAPER *established Feb. 17, 1899, combined with* PAPER TRADE JOURNAL *Nov. 16, 1899.* PAPER *established Sept. 21, 1910, combined with* PAPER TRADE JOURNAL, *Feb. 19, 1925.* *All rights to the above titles reserved.*

PAPER TRADE JOURNAL *is entered as Second Class matter at the Post Office at East Stroudsburg, Pa., under Act of Congress of March 3, 1879. Publication Office of Lockwood Trade Journal Co., Inc., 34 N. Crystal St., East Stroudsburg, Pa. Printed in U. S. A.*

Copyright 1944 by the Lockwood Trade Journal Company, Inc. The contents of PAPER TRADE JOURNAL *including all articles, illustrations, etc., are covered by copyright and may not be reprinted except by permission.*

CONTENTS

JUNE 1, 1944

	PAGE
Hold Wartime Service Meeting in Chicago	51
President's Message	51
Hercules Mixer Gets Third Prize	58
WPB and the Paper Industry	60
Less Paper for Civilian Use	64
Those Who Attended the Convention	65
Salvaging Paper at Ordnance Fields	68
Paper Firms to Build at Toronto	68
Wood Handling Methods at Northwest Paper Company	70
J. E. Underwood to Direct Research	78
Harry W. Doremus Surprised	78
Form Council for Stream Improvement	84
Shows Packaging Picture	87
Amends Book Paper Order	90
No Pulp Increase for Wall Paper	90
Obituary	92
Financial News	94
New York Stock Exchange Quotations	94
New York Curb Exchange Quotations	94
Century Paper Co. Elects Officers	94
Carey Names Production Head	94
Rules on Book Paper Price Ceilings	94
May Apply to Office of Pulp Allocations for More Waste Paper	96
Amend Conservation Order Affecting Supplying of Machinery	96
Editorial	98
Coming Events in Paper Industry	98
Paper Supply and Demand	98
Waterproof Papers, Inc. To Start at Worcester, Mass.	99
Production Ratio Report	99
Paperboard Operating Ratios	99
Latest Market Review	112
Miscellaneous Markets	114
Market Quotations	114
Classified Advertising	134

Technical Section *("TAPPI")*

The Roberts Grinder—A Radical Departure from Standard Wood Grinding Principles	101
Operation and Performance of a Controlled Vat System	103
Uniformity Factors in Coating Clays	105
Operation of Vacuum Pumps on Kraft Paper Machines	106
Calender Roll Care and Maintenance	107
Stock Preparation Problems Pertaining to Facial Tissue	109
Effect of Chip Length on Quality of Pulp	110
TAPPI Notes	110

PAPER TRADE JOURNAL IS INDEXED IN INDUSTRIAL ARTS INDEX

INDEX TO ADVERTISERS ON PAGE 140

Paper Mills
Steam Plants
Hydro-Electric Developments
Equipment Installations
Foundations and Docks

C. R. MEYER AND SONS COMPANY

General Contractors

Over Thirty Years of Paper Mill Construction

A COMPLETE ORGANIZATION AND EQUIPMENT . . . IMMEDIATELY AVAILABLE

We call attention of the Paper Mill Superintendents at this time to the fact that shut-downs need not be caused by the rebuilding and repairing of Stock Chests, Bleacher Tanks, Finishing Rooms, Digester Buildings, Floors and Roofs. We are constantly doing this type of work without causing any delay in manufacturing.

Telephones
676 — 677 — 2032

50 State Street
Oshkosh, Wisconsin

Prevent Stock Losses by W&T Chloramine Treatment

The growth of slime-forming and other bacteria in mill water will cause serious stock losses in manufacturing processes. Many mills prevent such losses by the Wallace & Tiernan method of chloramine treatment of their fresh water and white water.

This modern method checks the decomposition of material induced by the presence of bacteria; eliminates slime breaks; and reduces the amount of culls and rejects. It also cuts the loss in general efficiency that results from micro-organic growths.

Since manufacturing processes vary considerably in different mills, the best results are secured when the method of chloramine application is adapted to the specific requirements of the individual mill.

Wallace & Tiernan engineers, from their scientific studies in microbiological control, will gladly recommend the method best suited to your particular needs.

W&T CHLORAMINE TREATMENT
For Slime Removal and Microbiological Control

1. Lowers Stock Loss
2. Cuts Fuel and Power Costs
3. Minimizes Shutdowns for Clean-Ups
4. Prolongs Equipment Life
5. Reduces Time Loss from Breaks
6. Ends Slime Spots—Protects Quality

WALLACE & TIERNAN COMPANY, INC.

P-39

MANUFACTURERS OF CHLORINE AND AMMONIA CONTROL APPARATUS
NEWARK 1, NEW JERSEY • REPRESENTED IN PRINCIPAL CITIES

Vol. 118, No. 22

PAPER TRADE JOURNAL

Title Reg. U. S. Pat. Off.

June 1, 1944

Hold Wartime Service Meeting in Chicago

Silver Anniversary Convention of the American Pulp and Paper Mill Superintendents Association At Edgewater Beach Hotel Is Big Success—R. L. Barton of Michigan Paper Co. Chosen President.

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., May 29, 1944—The American Pulp and Paper Mill Superintendents Association Inc., held their War Time Service Meeting, May 24, 25 and 26 at the Edgewater Beach Hotel in Chicago, Ill. This meeting was the twenty-fifth anniversary of the Association.

The fact that this was the twenty-fifth birthday of the Association as well as many problems to be considered as a result of the war's influence on operating problems in the industry made this meeting the best of all twenty-five from at least two standpoints, first the quality of the papers presented, and secondly the attendance not only of the convention itself which was over 600, but of the various group meetings. Never in the memory of many of the oldest and most regular attenders of this convention have meetings been so crowded, nor the discussions following the papers been so valuable and animated.

The meeting opened at 9:30 Wednesday morning with the business meeting which cleared up the routine business of the Association after which the meeting was addressed by our President, Standford G. Blankinship as follows:

President's Message

It is my special privilege to call to order the twenty-fifth convention of our association — our silver anniversary, and at this time I would like to pay tribute to one, Fred Boyce, daddy of our group, for his vision and understanding of the industry when he called his small group together twenty-five years ago and founded this association. I believe we have lived up to their hopes and ideals because today our members cover these United States and Canada, and our affiliated companies number well over one hundred.

When you honored me by making me one of your vice-presidents, little did I think that my term of office as president would fall in a horrible war year; nevertheless, we have carried on as an association and grown both in membership and in the number of affiliated companies, cooperating always with the war effort in our programs and projects.

In looking to the future of our association, and may I say, not only the distant future, but the immediate future, we have several matters which I believe demand our wholehearted support. First, needless to say, an all out effort on our part, both as individuals and as a group, will help to bring this war to an early conclusion. Next, to my mind, our number one job should be labor relations. Who better than our group are qualified in our industry to take over this responsibility, and it is a growing responsibility. Our labor committee have much work ahead of them, particularly regarding post-war problems.

RAYMOND L. BARTON
President

Following labor relations, our project work should be carried on as an important part of our yearly program. This project work should be in conjunction with our affiliates, and in using the word "conjunction," I mean that both the members of the superintendents association and the affiliated group should work very closely together in making this project work a common problem to both for the good of the industry as a whole.

Our group meetings have now been set up

with a so-called revolving committee consisting of three members from the superintendents association, and one member from the affiliates acting as vice-chairman. This method will tend to make the work more permanent, as two men in the group will carry over each year into the following year, and in this way will always be able to complete any unfinished programs.

My own experience in the association prompts me to mention one other matter which I believe will tend to give us great strength as a group over a period of years and that is the lasting friendships which are made year after year. It has been my privilege both as a member and as an officer of this association to have made many new and sincere friends. There are so many possibilities that lie ahead of us as a group that I know with some vision we can accomplish a tremendous amount of good in our field, the pulp and paper industry.

In closing I wish to thank you for the honor of having been your president and want to leave with you this thought which comes to my mind, "Where there is no vision, the people shall perish." Let us apply that thought to our group and continue to grow and prosper.

At 10:30 the General Conference was held, the feature of which was a Panel Discussion on "The Utilization of Less Desirable Species of Woods in the Making of Pulp."

Following this discussion the convention heard John R. Robinson, chairman of Chicago Salvage Drive describe the Chicago Plan of Waste Paper Salvage.

The luncheon on Wednesday featured an address by Elmer T. Stevens, president, Charles A. Stevens & Co., of Chicago on "The Committee on Economic Development."

The General Conference was resumed after luncheon and heard Lawrence J. Finlon, chairman of the National Employment Commission of the American Legion discuss the "Re-employment of War Veterans".

The final event on Wednesday's program was a meeting of the Joint Labor-Management Committees which heard and discussed the following papers—"Suggestions" — F. A. Denz, General Chairman, United Air Lines, Transport Corporation Employees Suggestion Conference, Chicago, Illinois.

"Functioning of Labor-Management Committees" —H. M. K. Grylls, Chairman Labor-Management Committee, E. I. duPont de Nemours & Company, Grasselli Chemicals Department, East Chicago, Indiana.

HOMER H. LATIMER
Second Vice President

Thursday morning was devoted to various group meetings as follows:—

Chemical Pulp

Chairman—Niles M. Anderson, Marathon Paper Mills Company, Toronto, Ontario, Can.

Co-Chairman—John H. Noble, Improved Paper Machinery Corporation, New York, N. Y.

1. "Brown Stock Washing"—John H. Noble, Vice Pres., Improved Paper Machinery Corporation, New York, N. Y.

2. "Effect of Chip Length on the Quality of Wood Pulp"—Bruce Suttle, Director, Herty Foundation Laboratory, Savannah, Ga.

Subjects discussed — a. Recovery equipment, b. Bleaching.

Tissue Paper

Acting Chairman—F. X. Kreiling, Thilmany Pulp and Paper Company, Kaukauna, Wis.

Co-Chairman—J. W. Joslyn, Sandy Hill Iron & Brass Works, Hudson Falls, N. Y.

NILES M. ANDERSON
First Vice President

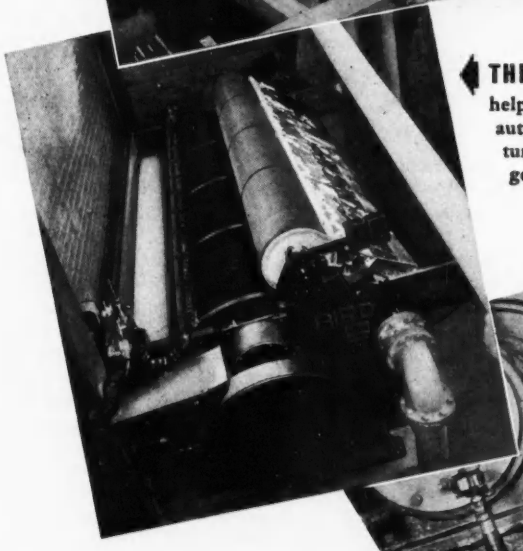
RAYMOND F. BENNETT
Third Vice President

BIRD MACHINERY

For Points Of Critical Importance In The Papermaking Process

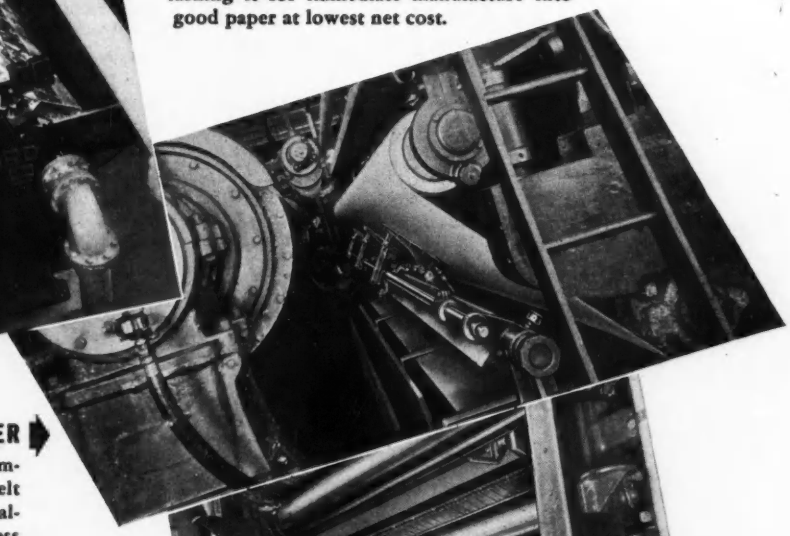
THE BIRD SCREEN

helps to maintain maximum production of uniformly good paper, despite increased dirt in the stock. It is essential for individualizing the fibres and delivering them to the paper machine free of lumps, strings and slime.



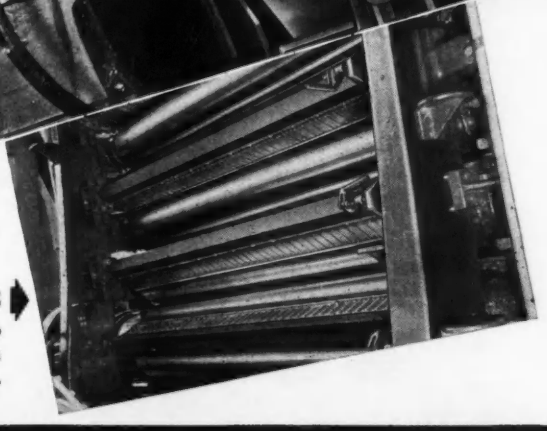
THE BIRD SAVE-ALL

helps to conserve good stock, recovering it automatically from the waste water and returning it for immediate manufacture into good paper at lowest net cost.



THE VICKERY FELT CONDITIONER

keeps the paper machine on the job, eliminating mid-week shutdowns for felt wash-ups. It helps maintain paper quality and cuts drying cost by keeping press felts continuously clean and open.



VICKERY DOCTORS

keep every papermaking roll in shape to do its best work continuously and with less attention and maintenance expense.

BIRD MACHINE COMPANY

SOUTH WALPOLE • MASSACHUSETTS

1. "Stock Preparation Problems Pertaining to Facial Tissues"—Kurt Wandell, Consulting Engineer, Honeybrook, Pa.

2. "Review of Paper Making Machinery for Facial Tissues"—J. W. Joslyn, The Sandy Hill Iron and Brass Works, Hudson Falls, N. Y.

3. "Some Commercial Aspects of Wet Strength Paper"—H. B. Freeman, American Cyanamid & Chemical Corp., New York, N. Y.

Subjects discussed—a. Paper Machines Adaptable to Facial Tissues. b. Fibrous Raw Materials.

Finishing, Storing and Shipping

Chairman—Raymond L. Barton, Michigan Paper Company, Plainwell, Mich.

Co-Chairman—H. E. Overacker, Cameron Machine Company, Brooklyn, N. Y.

Co-Chairman—John G. Bucuss, Acme Steel Company, Chicago, Ill.

1. "Methods to Assure Quick Return Trips of Motor Trucks and Freight Cars and War-Time Traffic Problems"—Claude Fenstermaker, Traffic Manager, Sutherland Paper Co., Kalamazoo, Mich.

2. "Calendar Roll Care and Maintenance"—George A. Thompson, Jr., B. F. Perkins & Son, Inc., Holyoke, Mass.

3. "Trees to Tribune" — Movie — Courtesy of the *Chicago Tribune*, represented by J. F. Gillispie, Manager, Public Service Office.

Subjects discussed — a. Shipping equipment. b. Power and lift trucks.

Power and Plant Engineers

Chairman—Raymond F. Bennett, Ecusta Paper Corporation, Pisgah Forest, N. C.

Co-Chairman—W. W. Cronkhite, General Electric Company, Schenectary, N. Y.

Co-Chairman—S. W. Fletcher, J. O. Ross Engineer Corporation, New York, N. Y.

1. "Post-War Power Generation and Distribution in Paper Mills"—D. L. Beeman, Engineer, Industrial Power Section, General Electric Company, Schenectady, N. Y.

This talk was supplemented by slides.

2. "The Economical Production of Steam in Pulp and Paper Mills"—M. H. Kuhner, Chief Mechanical Engineer, Riley Stoker Corporation, Worcester, Mass.

O. W. Messner
Fourth Vice President

George W. Craigie
Secretary-Treasurer

This talk supplemented by a Sound Movie.

3. "Humidity Control in Paper Mills" — R. H. Miller, J. O. Ross Engineer Corporation, New York, N. Y.

Subjects discussed—a. Steam and electrical equipment. b. Bearings and packings. c. Belting.

Woodroom and Woods Operations

Chairman—H. F. Hackworthy, Combined Locks Paper Company, Combined Locks, Wisc.

Co-Chairman—C. E. Staky, D. J. Murray Manufacturing Company, Wausau, Wis.

1. "Wood Handling Methods at Northwest Paper Company" — Mace Harris, Manager Pulp Manufacturing, Northwest Paper Company, Cloquet, Minn.

2. "Stream Barker"—Ernest C. Shaw, Specialist, Allis Chalmers Manufacturing Company, Milwaukee, Wis.

3. "The Robert's Grinder"—Richard M. Radsch, Sales Manager, Appleton Machine Works, Appleton, Wis.

Subjects discussed — a. Conveyor equipment. b. Woodroom operation.

Post-War Planning

The General Conference was resumed on Thursday afternoon with an open forum on "Post-War Planning" with Dr. Walter Hoffman of the Fitchburg Paper Co. of Fitchburg, Mass. as coordinator. This forum was based on the results obtained from a questionnaire sent to the Industrial Affiliates of the Association by the Post-War Planning Committee on Improvements and Developments.

Members of this committee were—Dr. W. F. Hoffman, Chairman, T. E. Dial, R. W. Hynes, S. W. Fletcher, N. M. Anderson, Glen Sutton, S. G. Blankinship, Ex-Officio and G. W. Craigie, Secretary.

Panel Members:

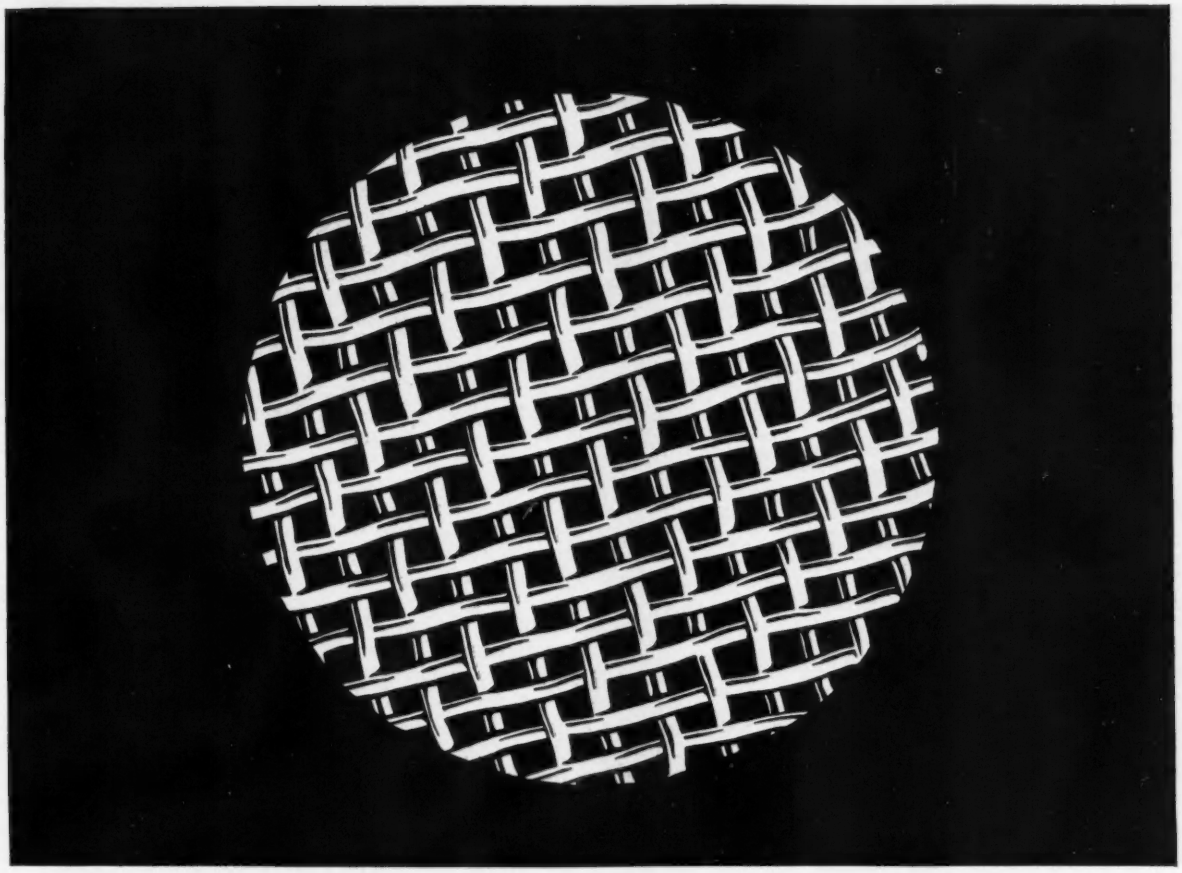
Niles M. Anderson, Marathon Paper Mills Company, Toronto, Ont., Canada.

Ronald W. Hynes, Newton Falls Paper Company, Newton Falls, N. Y.

Glen Sutton, Sutherland Paper Co., Kalamazoo, Mich.

Harold Sherman, Northern Paper Mills, Green Bay, Wis.

Herbert E. Karberg, Alliance Paper Mills, Ltd., Merritton, Ont., Can.



Slime-free screens . . . available to all

IS SLIME CLOGGING YOUR MACHINE SCREENS . . . causing weak spots . . . holes . . . torn sheets? Then give "Lignasan" a chance to prove its worth.

You can destroy slime-forming organisms with "Lignasan." It is your means to control the *profit-stealing* slime that clogs pipes, screens, rifflers and headboxes.

"Lignasan" is easy and inexpensive to use. You can add it as a slug dose in the beater—or you can bleed a solution of "Lignasan" into the system wherever slime formation tends to be excessive. Use it in solution form, too, to protect laps and slush pulp against mold attack and souring during storage or transit.

Only 3 to 8 ounces of "Lignasan" per ton of fiber, dry basis, are usually needed to control slime effectively and preserve pulp.

With time important and manpower scarce, any agent that reduces the frequency of cleanings and washups is a boon to mill operators. *And* when that economy of time is combined with simultaneous protection of material, no operator can afford to remain without its aid. If you're one of those operators who have not yet tried this production aid, get the facts today and learn how "Lignasan" can help *you*, too. Write our nearest branch office or E. I. du Pont de Nemours & Co. (Inc.), Grasselli Chemicals Department, Wilmington 98, Delaware.

SUPPORT THE FIFTH WAR LOAN

CONTROLS SLIME
PRESERVES PULP

Du Pont Lignasan

REG. U. S. PAT. OFF.

BACTERICIDE AND FUNGICIDE

DU PONT

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

Grover Keeth, Marathon Paper Mills Company, Rothschild, Wis.

Gordon K. Singletary, Brunswick Pulp and Paper Company, Brunswick, Ga.

Samuel R. Olsen, Champion Paper & Fibre Company, Hamilton, Ohio.

Elmer M. Leavitt, Hollingsworth & Whitney Company, Mobile, Ala.

Election of Officers

Following the General Conference there was the business meeting for association members which heard the reports of the various committees and elected the following slate of officers for the following year:

Raymond L. Barton, Michigan Paper Company, Plainwell, Mich., President.

Niles M. Anderson, Marathon Paper Mills, Company, Ltd., Toronto, Ont., Canada, First Vice-President.

Homer H. Latimer, Champion Paper and Fibre Company, Hamilton, O., Second Vice-President.

Raymond F. Bennett, Ecusta Paper Corporation, Pisgah Forest, N. C., Third Vice-President.

Ollie W. Messner, Robertson Paper Box Company, Inc., Montville, Conn., Fourth Vice-President.

Charles H. Reese, Nekoosa Edwards Paper Company, Port Edwards, Wis., Fifth Vice-President.

George W. Graigie, Cumberlandville, Me., Secretary-Treasurer.

Allied Industries Entertain

At six o'clock the Allied Industries entertained all those in attendance at the Annual Get-Together Cocktail Party. Needless to say everyone got together and had a good time. These high spirits carried over to make the convention banquet which followed immediately a huge success.

The toastmaster was retiring President S. G. Blankinship and the principal speaker was H. Duncan Hall of the British Raw Material Mission, who spoke on "Commonwealth and Empire".

At this time the Past President's Jewel and the L. D. Post Trophy was presented to Stanford G. Blankinship.

Following the various speeches everyone enjoyed the dancing in the Grand Ballroom.

Friday morning was devoted entirely to Group Meetings which were universally well attended. (See program for list of meetings and papers presented.)

Board

Chairman—James Rogers, II, J. & J. Rogers Company, Au Sable Forks, N. Y.

Co-Chairman — Jacob Edge, Downington Manufacturing Company, Downington, Pa.

1. "Observations on Dryer Drainage Systems" — T. L. Ulrich, Chief Engineer, Armstrong Machine Works, Three Rivers, Mich.

2. "Machine Coating and Its Application to Boxboard"—J. R. Simpsons, Machine Coating Sales, The Champion Paper and Fibre Company, Hamilton, Ohio.

3. "Operation and Performance of a Controlled Vat System"—Oscar C. Cordes, Downington Manufacturing Company, Downington, Pa.

Subjects discussed—a. Felts. b. Stock preparation equipment.

Fine Papers

Chairman—Homer H. Latimer, Champion Paper and Fibre Company, Hamilton, Ohio.

Co-Chairman—F. K. Becker, Bird Machine Company, South Walpole, Mass.

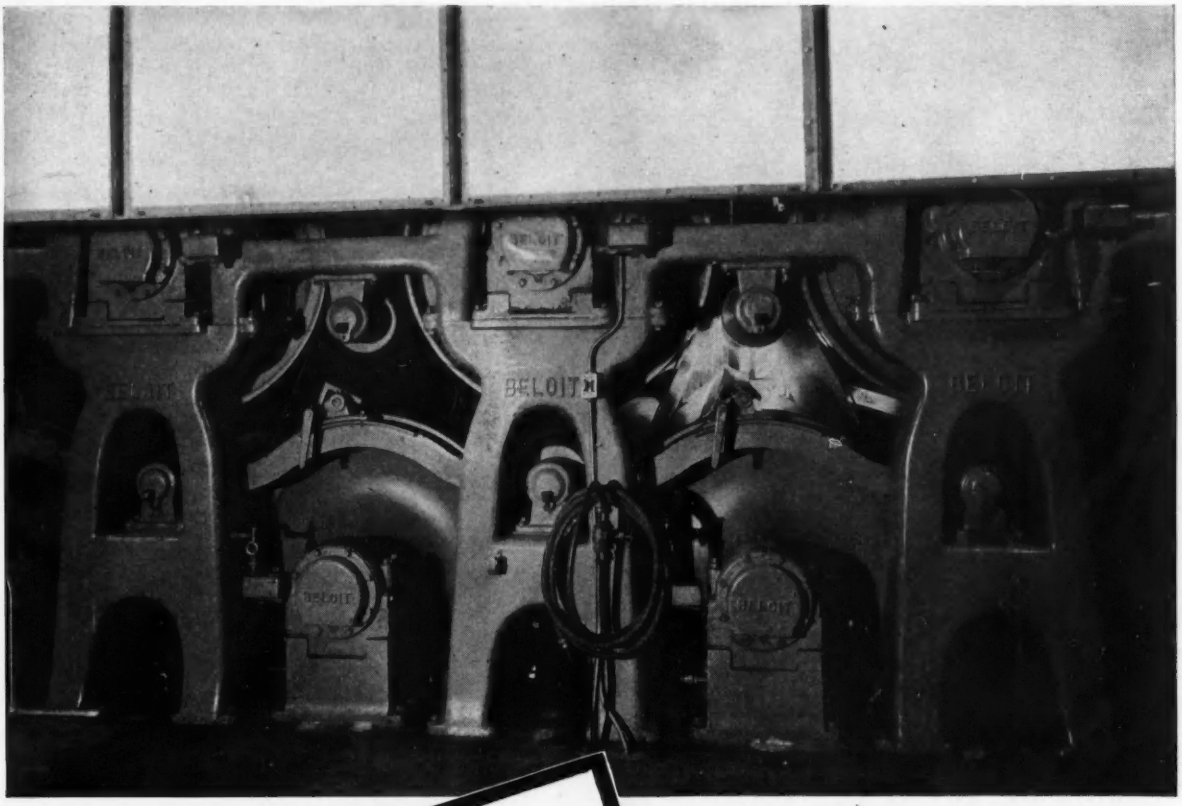
1. "Slices and Methods of Improving Formation" —John E. Goodwillie, Beloit Iron Works, Beloit, Wis.

2. "Stock Preparation and Treatment" — Robert Vokes, Shartle Brothers Machine Company, Middletown, Ohio. Assisted by J. D. Haskell and C. R. Crawford, Shartle Brothers Machine Company, Middletown, Ohio.

This talk was accompanied by lantern slides.

3. "The De-Inking of Waste Paper"—Dr. W. F.

ANNUAL BANQUET OF THE AMERICAN PULP AND PAPER MILL SUPERINTENDENTS ASSOCIATION



• *Built by* BELOIT IRON WORKS

Engineering foresight for dryers

SKF

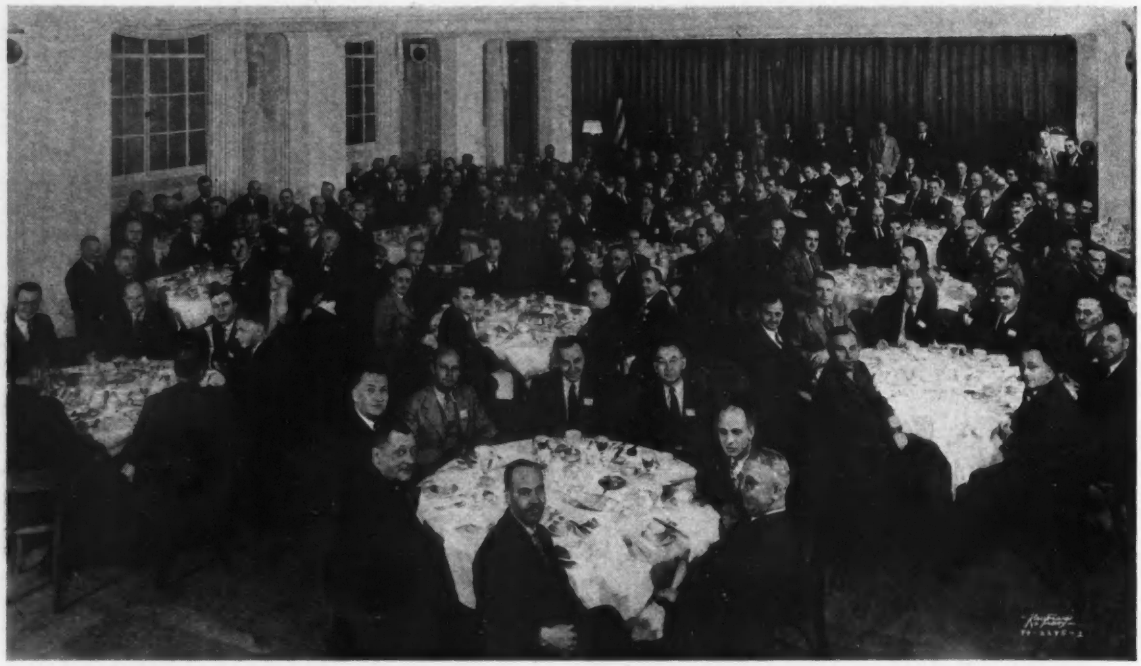
BALL AND ROLLER BEARINGS

Keen engineering foresight was responsible for placing SKF Spherical Roller Bearings on this dryer section of a 213″ Beloit Kraft Machine.

It's the thing that saves 72 five-foot diameter paper dryers and 20 four-foot diameter felt dryers as well as the many felt rolls in the dryer section from bearing letdowns.

Each SKF in the dryer section has inherent alignment. Front side dryer cylinder bearings are mounted in housings having three steel knive edges which, acting as rockers, allow the housings to move axially for free expansion and contraction in dryer cylinders. In addition, there is no felt strain because Wear is reduced to a vanishing point. Engineers who look ahead to outstanding *machine* performance records invariably figure on *bearing* performance first. 5555

SKF INDUSTRIES, INC. • FRONT ST. & ERIE AVE. • PHILADELPHIA 34, PA.



DINNER, INDUSTRIAL AFFILIATES OF THE AMERICAN PULP AND PAPER MILL SUPERINTENDENTS ASSOCIATION

Hoffman, Fitchburg Paper Company, Fitchburg, Mass. Assisted by S. R. Olsen, Champion Paper and Fibre Company, Hamilton, Ohio.

Subjects discussed — a. Paper machines, including wires. b. Rubber and rubber synthetics.

Coated Papers Discussed

Chairman—Ronald Hynes, Newton Falls Paper Company, Newton Falls, N. Y.

Co-Chairman—Olin W. Callighan, Edgar Brothers, Kalamazoo, Mich.

1. "Converted and Machine Coating" — Richard Alden, Supt., Watervliet Paper Company, Watervliet, Mich.
2. "The Printer's Reaction to Coated Papers"—A. McAneny, Bradner Smith and Company, Chicago, Ill.
3. "Latest Developments in Clay Mixing and Blending Equipment"—R. Sentman, J. H. Day Company, Chicago, Ill.
4. "Clays"—Dr. C. G. Albert and O. W. Callighan, Edgar Brothers, Metuchen, N. J.
5. "Pigments"—John Dickson, Jr., R. T. Vanderbilt Company, New York, N. Y.
6. "Casein"—Harris Ware, P. M. C. Div., Hercules Powder Company, Kalamazoo, Mich.
7. "Starch"—Robert W. VanKirk and J. E. Killinger, Penick & Ford, Ltd., Inc., New York, N. Y.

Subject discussed—a. Clays, starches, fillers and colors.

Kraft Papers Discussed

Chairman—Elmer M. Leavitt, Hollingsworth and Whitney Co., Mobile, Ala.

Co-Chairman—George Spencer, Pusey and Jones Corporation, Wilmington, Del.

1. "Operation of Vacuum Pumps on Kraft Paper Machines"—C. L. Clark and C. Vicario, Nash Engineering Company, New York, N. Y.
2. "Trees and the Harvester"—Motion Picture by J. H. Allen, President, Florida Pulp and Paper Company, Pensacola, Fla.
3. "Application of Electronics in the Paper Industry"—A. J. Germaine and R. R. Baker, Westinghouse Electric and Manufacturing Company, East Pittsburgh, Pa.

Subjects for Discussion—a. Chemicals. b. Pumps.

The luncheon on Friday had for its toastmaster Mr. T. E. Dial of the Socony-Vacuum Oil Company and the principal speaker was Frank Smothers, chief of the editorial staff of the *Chicago Sun* who spoke on "The Immediate Problem of the Invasion—and After".

The final event of the Convention was the last meeting of the General Conference which heard Allen Hyn, Chief Distribution Section, Paper Division of the War Production Board, who presented a paper on "WPB and the Paper Industry".

Technical Papers

Some of the papers presented at the convention are presented in full in the Technical Section, beginning on page 101 of this issue of the PAPER TRADE JOURNAL.

Hercules Mixer Gets Third Prize

The Hercules Mixer, published by Hercules Powder Company, has been awarded third prize in the nation-wide cover contest sponsored by the American Red Cross to promote the 1944 War Fund Campaign.

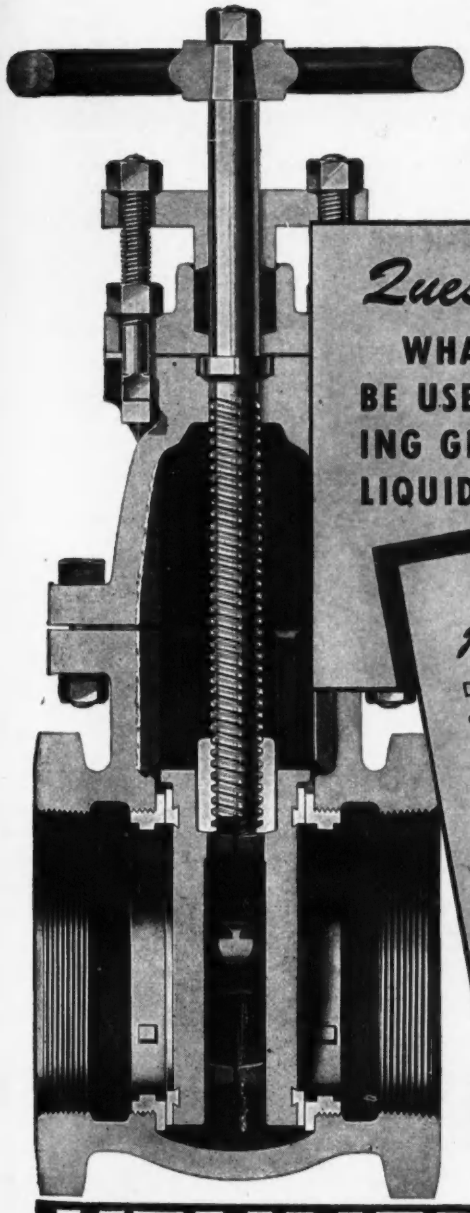
The Mixer, edited by Mrs. Evelyn Stoll Reinhardt, is one of the older continuously published house magazines in the nation, having been first issued in 1919.

When the American Red Cross asked company magazines to assist them in their War Fund Campaign, William D. White, a well-known Delaware artist and mural painter, and Edward L. Grant, of Hercules' Advertising Department, collaborated in drawing and laying-out the cover that won third prize in competition with nearly 200 company magazines from all parts of the nation.

Can You Answer These Questions ON VALVE SELECTION?

TODAY, when it is more important than ever before to keep pipe lines flowing at maximum efficiency, too much care cannot be given to selecting the right valve for each job. Before you "draft" a valve for that all-important line, make sure it is the one you really need.

Here are answers to two frequently asked questions on valve selection, taken from the files of The Kennedy Valve Manufacturing Co. Other problems will be considered in succeeding advertisements in this series.



Questions:

WHAT KIND OF VALVE SHOULD BE USED FOR LIQUIDS CONTAINING GRIT? FOR GUMMY LIQUIDS?

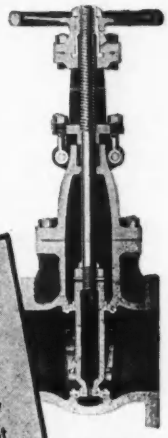


Fig. 1

Answers:

Double-disc gate valves (Fig. 2) are preferable where liquids containing grit are to be handled, because the flexibility of their operating mechanism enables one disc to seat tightly if grit is caught on the other seat, and also because the discs and seats are more readily refaced than those of wedge gate valves. Wedge gate valves (Fig. 1) are used where gummy liquids are handled, and are preferred for steam service by some engineers and operators.

USE DOUBLE-DISC GATE VALVES FOR LIQUIDS CONTAINING GRIT . . . WEDGE GATE VALVES FOR GUMMY LIQUIDS.

Fig. 2

If you have a valve selection problem, write to us. As Kennedy makes a complete line of standard gate, globe, angle and check valves, you can be sure of receiving unbiased help. For full description of Kennedy valves, pipe fittings and fire hydrants, send for 240-page Kennedy Catalog.

KENNEDY

VALVES • PIPE FITTINGS • FIRE HYDRANTS

THE KENNEDY VALVE MFG. CO. • ELMIRA, N.Y.

WPB and the Paper Industry*

By Allan Hyer[1]

Any attempt to draw a relationship between the War Production Board and an industry must take into account the functions of the one and the adaptability of the other to those functions.

The War Production Board was designed for war and owes its existence to that purpose only. It is charged with the responsibility of supplying all the needs, except manpower, of a war machine that encircles the globe; a machine that moves swiftly and in many directions. War strategy changes with a suddenness that reverses decisions today that were made yesterday. At the same time, domestic war and civilian economies must be maintained and without which all would be lost.

Our entrance into the war two and a half years ago, found the paper mills completing the most successful production year in history. Little thought was given then to paper or paperboard as war materials, furthermore, they were plentiful.

First Impact Against Paper Mills

The first impact against the paper mills came with the restrictions on the use of steel, copper and other metals. This meant the substitution of other materials for certain operating supplies and repairs and brought with it the first need for adjustment to war conditions. The scarcity of metals was followed shortly by a curtailment of chemicals and the art of paper making was beginning to have a new meaning. But other industries were changing, too. In Consumers Durable Goods, plants that had been manufacturing refrigerators, typewriters, radios, electrical appliances and many other similar items, were converting to the production of small arms, shells, parts for planes and tanks. As a result, there was a decline in demand for paper and paperboard that drove the production curve to a dangerously low level in the late summer of 1942. There was talk of concentration, a move that would have closed many mills in the interest of releasing labor and conserving materials and transportation. Fortunately, for the mills, and for the war program, this action was discouraged and events that followed were to prove that paper and paperboard, almost overlooked in the tremendous drive to build the tools for fighting men, were themselves to become the most important weapons of all. Another Cinderella story, with paper as the leading character.

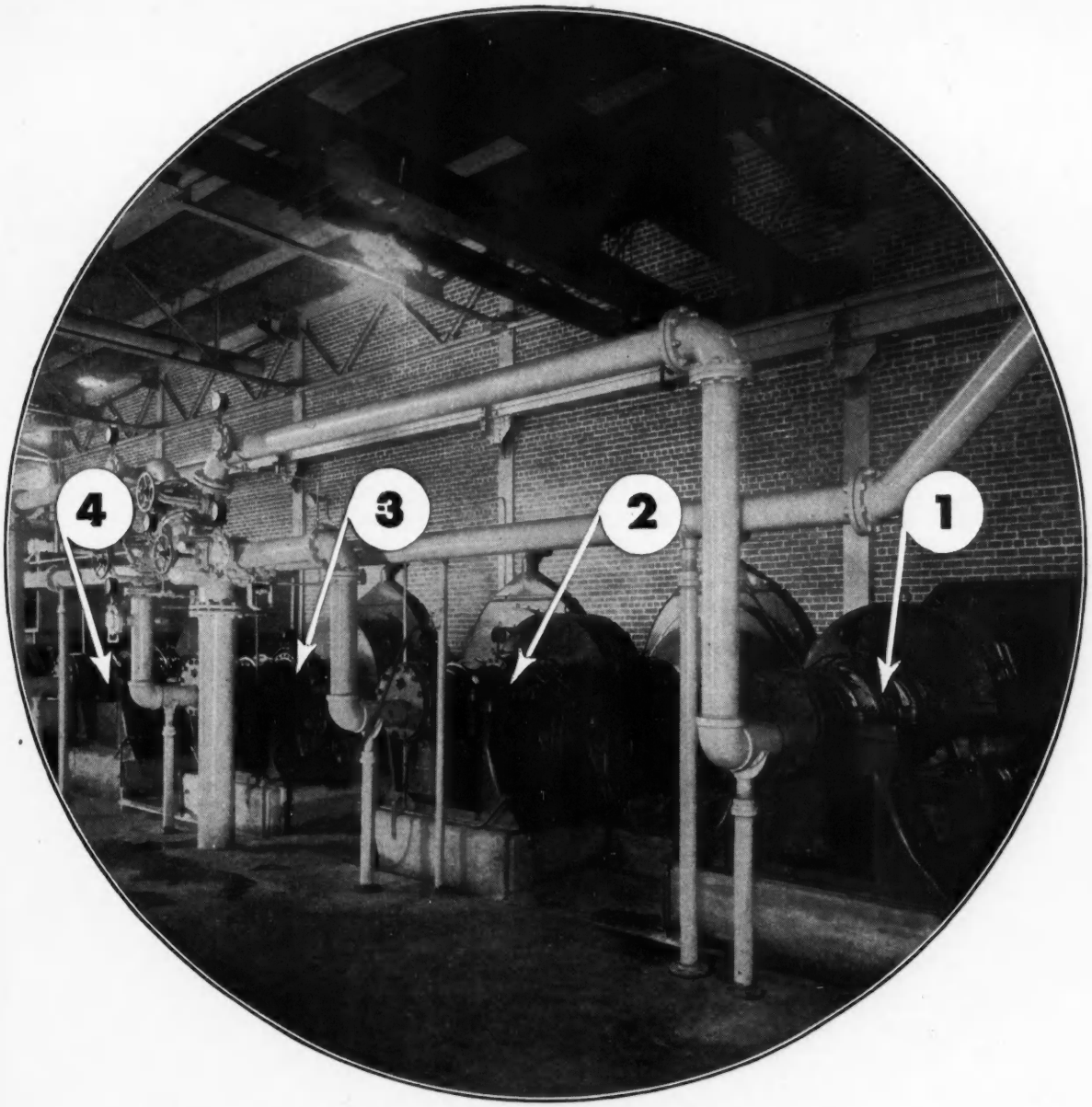
Early in the year 1942, it was apparent that the normal supply of pulpwood could not be maintained against the loss of imports, the desertion of labor from the woods for the more lucrative jobs in shipyards and industry, and the accelerated draft. The allocation of pulp became a necessity. In simpler terms, allocation is a form of rationing to insure equal distribution and to prevent excessive withdrawals from a limited supply or inventory. This timely action has been the principal reason for the continued operation of all mills and a guarantee for the production of the essential military and civilian requirements.

As the running time in the mills continued to drop off, it became imperative that the industry turn its attention to new products—products that would fit into the war program. With this in mind, the Paper Division set up a War Products Development Section, staffed by several of the best technical men in the industry. The results were immediate and, to many, amazing. Contacts with the Ordnance and Quartermaster Departments of the Army disclosed

* Presented at the meeting of the American Pulp and Paper Mill Superintendents Association, Edgewater Beach Hotel, Chicago, Ill., May 24-26, 1944.

[1] Chief, Distribution Section, Paper Div., WPB, Washington, D. C.

BOARD OF TRUSTEES MEETING OF THE AMERICAN PULP AND PAPER MILL SUPERINTENDENTS ASSOCIATION



PRECISION REFINING is rapidly growing in use on boards and paper made from kraft, sulphite and soda pulps. . . . Many board and paper machines are now equipped with Sutherlands ***ONLY***. . . . The reason, of course, is better quality and lower cost of production.

SUTHERLAND REFINER CORPORATION, TRENTON, N. J.

that paper and paperboard were the only available substitutes for steel, copper, glass and lumber, and, in many cases, the best materials suitable for certain purposes. Technical research and development were at the peak and the effect was soon noticeable on the production lines; from V-boxes to V-mail, the array of new products was an impressive one. Adding to these the growing demand for industrial papers, such as towels, tabulating cards, tags, carbonizing tissues and many others, and again you had a full order book.

Effect of Changes Salutary

The effect of these changes was salutary. It is not enough to speak of it as a come back, it was more of a belated recognition of a product that had been taken for granted, as Donald Nelson once expressed it, and had now proved its essentiality.

This brief history brings us into the year 1944 to face the real problems that must be solved if we are to continue to give to the Armed Services the paper and paperboard products they must have to win the war. The answer to all of the questions is raw materials—principally pulp and waste paper.

You are familiar with the figures that have been published from time to time on the production of pulpwood. You know that the consumption has been higher than the supply since 1941 so that inventories are less than three-fourths of that earlier date, yet the demand for paper continues to increase, with 75% going to direct war purposes and the maintenance of the war economy.

All of you have suffered the consequences of this condition and you have the right to know what is being done to correct it.

Pulpwood Section Expanded

In the summer of 1943 the Pulpwood Section of the Paper Division was expanded and given new powers to cope with the toughest job in the industry. The first move was the appointment of an area representative in each of the woods sections. All were experienced woods operators who knew what had to be done and how to do it. But the doing was not so easy. Logging crews aren't found on street corners and the only prospect appeared to be prisoners of war. After many weeks of planning, camps were started until now, there are almost 10,000 men—prisoners of war—working under the supervision of the Army; and the wood is beginning to move.

Next to labor the most important item in the woods is equipment. Almost 90% of all pulpwood in this country is handled by trucks and tractors. With 85% of the trucks and tractors going to the Army, the pulpwood producers have performed miracles in keeping the old equipment in use. Power saws and homemade loading rigs have played an important part and an educational campaign on the use of more labor saving equipment is now under way in each area. Many new barking drums of all types have been put into production in the past few months, especially where peeled wood is not obtainable. You can be sure that if it's humanly possible, you will get more wood. The best news of the week is the release of 32,000,000 board feet of logs from Canada for shipment to our own pulp mills.

Waste paper has now become an aristocrat among the raw materials for paper making. Nearly 70% of all mills are using waste paper—twice as many as before the war. Collections are improving each week as a result of the intensive campaign, but it is another case of the more you get the more you need. We can't all chop trees but we can collect waste paper—not only can, but must because this time it is for keeps. The largest users of this material, the paperboard and container mills, are looking at a demand that is almost unbelievable and the realization that our supplies to the war zones will bog down if we don't make it, doesn't leave a very happy thought to take to bed with you. A new Order, M-377, issued on Tuesday of this week, gives authority to the War Production Board to issue directives for the delivery of waste paper at ceiling prices to consumers needing it for essential purposes.

Far Short of Being Enough

In spite of the gains that are being made in the supply of pulpwood and waste paper, the amount is far short of being enough. But the show must go on and emergency measures have to be used to make ends meet. All of which means that you are performing a few miracles on your own account. The basis weights you are using under Order L-120 have not brought any happiness to your operating departments but they have extended the use of pulp to give more yardage to cheer up the consumers who must have more and more for essential purposes. No matter how thin you make it, it is still paper.

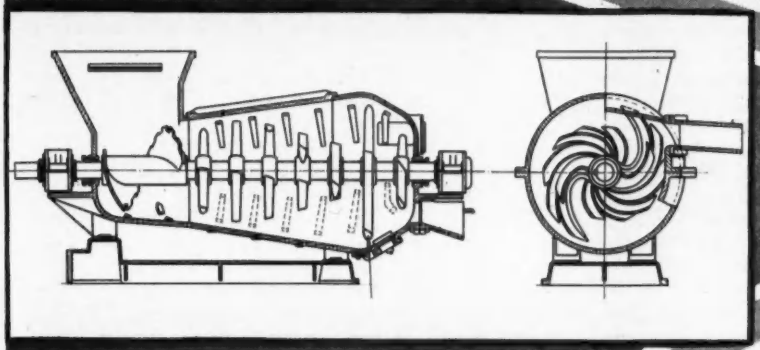
There was a time when certain recognized claimants had difficulty obtaining their requirements. In some mills these orders were accepted willingly, but an occasional refusal from others often resulted in a delay of some very necessary program. Consequently, M-241 became necessary, better known as the reserve production order. The issuance of a directive against your production is governed entirely by your cooperation in the manufacture of the most essential grades. They are not always the easiest orders or the ones you want to make but under M-241 the responsibility for making them is shared by all.

There are other orders on the book—you know what they are—but the two just mentioned are representative of the formula that is used for all of them. Basically an order conserves a material or regulates distribution, or both. Properly speaking, an order gives protection. If it is for the conservation of material it means that the available supply will not be dissipated for unnecessary purposes and that you will receive the share you are entitled to. If it is a matter of distribution it means that the war program will get what it needs first. It is obvious that orders, allocations and other regulations should have an adverse effect on your operating economy, which only proves that General Sherman had the right idea.

Upkeep of Mill Equipment

One of your most serious problems from the very beginning has been the upkeep of your mill equipment. Anyone familiar with the conditions under which you have operated for more than two years must, in fairness, pay some compliment to the ingenuity and resourcefulness of your mechanical departments during a production period that has far exceeded anything you have ever done before. The machinery you would have had under normal conditions is now flying, floating and shooting all over the world. Since the suspension of the manufacture of paper mill machinery in April, 1942, your machinery industry has averaged as high as 85 to 90% on direct war work leaving little more than enough

the JONES PULPER



A Versatile Pulping Machine

SULPHITE

BOOK

KRAFT

RAG

BOARD

Jones

GEARED FOR WAR PRODUCTION

E.D. JONES & SONS COMPANY-PITTSFIELD, MASS.

Builders of Quality Machinery for Paper Mills

capacity to carry on your necessary repair programs. But fortunately some relief is now available.

The importance of maintaining paper production made it possible for us to obtain a grant of materials starting with the second quarter to be used in the manufacture of paper mill machinery. It has been allowed as a special recognition of the need, not as part of a reconversion program. The amount released is considerably more than we have had in a good many months, but still not enough to satisfy all of your requirements, which means that you will receive according to your capacity to give—machinery will be bartered for essential production.

In a letter that was mailed to the industry in late March, we emphasized particularly that only cases having some bearing on the production of military and government requirements would be approved. This may have discouraged some from filing applications. We do not intend to hold to this strict limitation. Your cases will be given consideration for whatever production you are making if we are convinced that by certain improvements you will be able to conserve pulp, use more secondary fibers, or in general improve your conditions for an ultimate gain in paper production. It is true that we will favor the operations that, according to our records, will be most useful in the war program. This is not a tough attitude, but a policy that governs all actions of the Paper and Paperboard Divisions.

Coincident with the release of more material, Order L-83 was amended as of April 20, 1944 with changes that should be beneficial. Probably the most important change was in the application form itself. You are now required to file on Form WPB-1319 and where the dollar value is $2,500.00 or greater, your applications are mailed directly to the Paper Division in Washington, and in most cases will be processed and returned to you in one day. For cases that have a dollar value of less than $2,500.00, you will file on the same form with the nearest District Office of the War Production Board. In the new order, it is permissable to use your MRO ratings for repairs, maintenance and operating supplies up to the value of $2,000.00 instead of $1,000.00 as before. This refers to all repair and maintenance parts, but where the amount is greater than $2,000, you must file on Form WPB-1319.

It is still possible for you to obtain capital goods items up to $500 with an MRO rating, as provided in CMP Regulation 5.

Applications Totaling $3,000,000 Approved

As a result of the new equipment program, applications totaling almost $3,000,000 have been approved since March 1 and for lack of complete information and failure to establish the immediate necessity, a similar amount has been denied. Some of these cases are held in our file until others of greater importance have been scheduled. It is always your privilege to file a new application for reconsideration.

In spite of the scarcity of materials and the various regulations, the paper industry is really doing a good job. It should be encouraging to you to know that your affairs are handled by your own representatives. Those writing the orders, allocating materials, issuing directives, are from your own industry. The directors of the Paper and Paperboard Divisions are well known to all of you. Each has a prodigious capacity for work and each is endowed with the ability and leadership necessary to their responsibilities. They have their sights trained directly on the two things that are most important: First, to provide the paper and paperboard production necessary to win the war and, second, to maintain the high standards of the industry as consistently as possible with the first. These purposes are reflected throughout the entire personnel of the two Divisions.

Yet in the final analysis, the job is not the responsibility of any one group, government or otherwise. It goes back to that same old teamwork we've heard about so mnay times. The other day a flyer just returned from the Southwest Pacific was describing the success of our Air Forces. He attributed it to the teamwork of the American Squadrons. Our planes stay in formation and follow the signals, whereas the Japs fly at random and become easy targets for our combined fire power.

Still a Lot to Do

There is still a lot to do. The signs do not point to an easy victory in Europe or a quick one. There are many who are in a position to know that believe victory over Germany will not come this year. Certainly there is no let up in war building. There is plenty left to do and especially in the Paper Industry. We cannot afford to minimize the importance of anything or relax our individual efforts.

When the allocation of pulp is inadequate, when the directives seem to ask the impossible, and when your applications are denied, keep in mind that it is all for the best interests of G. I. Joe—to keep him in a position to score when the right time comes. His is the really big job and he is the one we are working for.

Less Paper For Civilian Use

WASHINGTON, D. C., May 31, 1944.—The civilian population of the United States must get along with less paper, according to the May Industry Report on pulp and paper, released today by the Department of Commerce. This conclusion is based on the assumption that the war requirements will remain at the current high rate.

Even though pulpwood receipts during the ensuing quarters are maintained and wood pulp production and aggregate waste paper receipts are similarly maintained supplies of many types of paper for civilian use will continue to diminish.

Aggregate production of kraft pulp and kraft paper and paper board has been maintained at a moderately higher level than in previous months, but output has not kept pace with increased war needs.

Also, it is pointed out, that over a period of many months there has been a general disappearance of kraft paper and paper board available for waste and salvage, although aggregate production has increased. This is due to a larger percentage of the total going into the packaging of war material shipped abroad or into packaged supplies stock-piled in warehouses in this country for military use.

The net result is that even though kraft pulp output is being sustained, the volume of pulp plus waste kraft paper and board is smaller than in prior months.

The only apparent solution of this outlook of diminishing paper supplies for civilian use is a stepping up of pulpwood output, primarily in the southern area, with an increasing production of sulphate pulp. In recent weeks the trend toward sustaining, if not increasing, pulpwood supplies in the southern area has been comparatively favorable.

Those Who Attended the Convention

A

Ralph P. Abercrombie, Cheney Bigelow Wire Works.
Harry V. Ackerman, E. I. du Pont de Nemours & Co.
N. N. Agnew, The Bristol Co.
C. G. Albert, Edgar Brothers Co.
Edgar D. Alexander, Container Corp. of America.
John B. Allen, Chromium Corp. of America.
J. R. Almand, Union Bag & Paper Corp.
Mrs. J. R. Almand.
M. J. Auchter, Hoberg Paper Mills, Inc.
Mr. and Mrs. Niles M. Anderson, Marathon Paper Mills of Canada.
Bernard K. Asdell, Minnesota & Ontario Paper Co.
Mr. and Mrs. A. W. Ayles, Amer. Cyanamide & Chemical Corp.

B

C. L. Bachelder, Hercules Powder Co.
H. R. Bailey, Union Screen Plate Co.
R. R. Baker, Westinghouse Elect. & Mfg. Co.
Henry P. Baldwin, C. W. P. & P. Co.
Marshall L. Barker, Beckett Paper Co.
Erwin G. Artz, E. G. Artz, Inc.
Wm. H. Barrett, Minnesota & Ontario Paper Co.
T. M. Barry, Fraser Paper, Ltd.
P. W. Bartholomew, Hercules Powder Co., Paper Makers Chemical Dept.
H. J. Bartlett, Crane Co.
Mr. and Mrs. Ray L. Barton, The Michigan Paper Co.
G. G. Bauer, Sangamon Paper Mills
R. W. Bauman, Johns-Manville Corp.
Mr. and Mrs. B. Beasley, Brown Paper Mills Co., Inc.
Gene Bechard, Eastwood-Nealley Corp.
F. K. Becker, Bird Machine Co.
Robert E. Beckett, Oxford Miami Paper Co.
Mr. and Mrs. K. H. Bedell, Foster Wheeler Corp.
D. L. Beeman, General Electric Co.
Luther C. H. Beighey, Hammermill Paper Co.
Murray H. Bennett, Stebbins Engineering & Mfg. Co.
Raymond F. Bennett, Ecusta Paper Corp.
Bernard Benson, Williams Gray Co.
Emil H. Berges, Farrel-Birmingham Co.
Mr. and Mrs. Charles E. Bertschy, Draper Bros. Co.
Harry J. Bettendorf, Fibre Containers.
Allen W. Betz, Gulf Eng. Co., Inc.
Harold W. Bialkowsky, Pulp Div. Weyerhaeuser Timber Co.
L. H. Bidwell, Jr., Riegel Paper Corp.
C. T. Bingham, The W. S. Tyler Co.
O. T. Birkeness, Wallace & Tiernan Co., Inc.
M. M. Bixby, Hercules Powder Co.
J. E. Black, Mead Corp.
H. M. Blandin, Central Fibre Products Co.
Stanford G. Blankinship, Port Royal Pulp & Paper Co.
Geo. A. Bogle, Central Fibre Products Co.
Howard W. Bogle, Central Fibre Products Co.
S. P. Boland, The Stanley Works, Steel Strapping Div.
Frank E. Boli, Wm. Powell Co.
Mr. and Mrs. W. Gordon Booth, Tonawanda Boxboards.
Paul Boronow, Valley Iron Works Co.
F. C. Boyce, Wisconsin Paper & Products Co.
A. T. Brainerd, Ciba Company, Inc.
Lewis H. Breyfogle, Draper Bros. Co.
B. M. Briggs, Lawrence Paper Co.
Mr. and Mrs. Ralph E. Briggs, Draper Bros. Co.
Gordon W. Brown, Pulp Div., Weyerhaeuser Timber Co.
H. A. Brown, Miamisburg Paper Co. Div.
Mr. and Mrs. W. H. Brydges, Bedford Pulp-Paper Co.
Mrs. Walter Buchanan, Ohio Wax Paper Co.
Walter Buchanan, Ohio Wax Paper Co.
J. G. Bucuss, Acme Steel Co.
J. Lawrence Buell, Jr., Reliance Electric & Engineering Co.
John J. Burke, Bird & Sons, Inc.
James G. Bullard, Corn Products Sales.
Wm. F. Butler, Sanitary Paper Mills.
E. R. Burling, Improved Paper Machinery Corp.
DeHaven Butterworth, H. W. Butterworth & Sons Co.
Fred H. Burrows, Burrows Paper Corp.
John Buss, Provincial Paper, Ltd., Toronto, Ont.

C

W. N. Cairnie, E. B. Eddy Co., Ltd., Hull Province, Que., Canada.
Olin W. Callighan, Edgar Bros. Co.
Eric W. Camp, Natl. Aniline Div.
R. G. Carson, Solvay Sales Corp.
O. F. Carter, Mead Corp.
Mr. & Mrs. Thomas N. Carter, Cameron Machine Co.
Charles Champion, Millers Falls Paper Co.
John C. Chandler, The Bristol Co.
Neil H. Christian, NeKoosa Edwards Paper Co., Inc.
C. J. Clark, Ingersol-Rand Co.
C. L. Clark, Nash Engineering Co.
Edwin W. Clark, E. C. Atkins & Co.
A. C. Clarke, John W. Bolton & Sons.
James B. Clarke, National Aniline Div., Allied Chemical & Dye Corp.
Walter Clifford, Penick & Ford Ltd., Inc.
W. R. Cloud, U. S. Paper Mills.
Edward H. Cohn, Pioneer Paper Stock Co.
Arthur W. Cole, Rex Paper Co.
F. H. Cole, Walworth Co.
Parkman A. Collins, Warren Steam Pump Co., Inc.
George L. Coltart, Ingersoll-Rand Co.
J. H. Compton, Jr., General Mills, Inc.
R. S. Conabee, Lukenweld, Inc.
A. M. Cooper, Westinghouse Electric & Mfg. Co.
G. H. Corbin, Penn. Salt Mfg. Co.
O. C. Cordes, Downingtown Mfg. Co.
John Cornell, *Paper Mill News.*
John E. Costello, J. M. Huber, Inc.
Mr. and Mrs. E. T. A. Coughlin, Bryant Paper Co.
Roy T. Cowing, Monsanto Chemical Co.
Harry Crabtree, E. B. Eddy Co., Hull, Que., Canada.
Mr. and Mrs. George W. Craigie, Field Secretary.
Cliff R. Crawford, Black-Clawson Co.
E. W. Crist, Hummel & Ross Fibre Co.
Mr. and Mrs. J. F. Cronin, Cheney Bigelow Wire Works.
W. W. Cronkhite, General Electric Co.
John Franklin Crook, John W. Bolton & Sons, Inc.
Chris. C. Crusius, Bagley & Sewall Co.
Fred S. Crysler, Container Corp. of America
J. O. Czerwonky, The Dicalite Co.
L. A. Carpenter, Bergstrom Paper Co.
Herbert C. Church, American Coating Mills.
Robert Colston, Hagan Corp.

D

P. E. Daley, Eastwood Neally Corp.
Roy L. Davis, Detroit Sulphite Pulp & Paper Co.
R. E. Davis, Corn Prod. Sales Co.
Buel W. Dean, E. D. Jones & Sons Co.
Mr. and Mrs. Harry W. Deffew, Standard Paper Mfg. Co.
C. D. Demers, Taylor Instrument Co.
Dave DeZurik, DeZurik Shower Co.
T. E. Dial, Socony Vacuum Oil Co., Inc.
Mr. and Mrs. J. D. Dickson, Jr., R. T. Vanderbilt Co.
F. A. Dieckbrader, Hinde & Dauch Paper of Canada.
John C. Dieffenderfer, Hercules Powder Co.
Mr. and Mrs. Guy A. Disbro, The W. S. Tyler Co.
Edward Docherty, Holyoke Wire Cloth Co.
Paul A. Donaghy, Corn Prod. Sales Co.
Joe Doty, Simonds Worden White Co.
Robert Douglas, The Ohio Knife Co.
Mr. and Mrs. Joseph H. Dow, Castle & Overton, Inc.
A. Scott Dowd, Fritz Publications, Inc.
Louis Dozier, Rhinelander Paper Co.
Richard F. Driscoll, Smith Paper, Inc.
George F. Durand, Port Huron Sulphite & Paper.
C. L. Durkee, D. J. Murray Mfg. Co.
H. E. Duston, Monsanto Chemical Co.
R. A. Diehm, Container Corp. of America.

E

D. W. Eamer, Rolland Paper Co., Ltd.
Henry L. Eastman, The Eastman Supply Co.
Frank Echtner, Simonds Saw & Steel Co.
Jacob Edge, Downingtown Mfg. Co.
N. V. Edmonson, Brunswick Pulp & Paper Co.
Henry O. Ehrisman, The Foxboro Co.
Mr. and Mrs. Frank B. Eilers, Orr Felt & Blanket Co.
K. Ivan Ekholm, Natl. Aniline Div., Allied Chem. & Dye Corp.
Harry D. Eliason, Cellulose Sales Co., Inc.
Linwood W. Elliott, Lobdell Co.
E. H. Ellis, Sorg Paper Co.
Mr. and Mrs. Robert L. Eminger, Natl. Secy.-Treas. Supt. Assn.
G. F. Enderlein, Mosinee Paper Mills Co.
Fred R. Erbach, Beloit Iron Works.
Geo. M. Erickson, The Northwest Paper Co.
Mr. and Mrs. L. H. Everlien, Appleton Woolen Mills.

F

W. J. Fahrenkurg, Badger Paper Mills, Inc.
James M. Fallon, Beverage Paper Co.
Harrison J. Farra, Lobdell Co.
William C. Ferguson, John W. Bolton & Sons, Inc.
Mr. and Mrs. James Fish, Paterson Parchment Paper Co.
O. F. Fischer, Bryant Paper Co.
Mr. and Mrs. L. E. Fitzgerald, Hercules Powder Co.
M. J. Foley, Westinghouse Electric & Mfg. Co.
Mr. and Mrs. E. T. Fleming, Jr., Fleming & Sons, Inc.
L. M. (Mike) Fleming, Detroit Sulphite Pulp & Paper Co.
S. W. Fletcher, J. O. Ross Engineering Corp.
James W. Flint, The Babcock & Wilcox Co.
Myron F. Flotow, Allied Paper Mills.
J. P. Foley, Hawley P. & P. Co.
Jaul J. Foley, Worthington Pump & Machy. Corp.
Samuel J. Fortune, Rochester Paper Co.
Paul M. Foster, Williams Gray Co.
C. G. Frampton, Fernstrom Paper Mills, Inc.
A. Wm. Fraser, Worthington Pump & Mach. Co.
H. B. Freeman, American Cyanamid & Chem. Corp.
H. W. French, Fawick Airflex Co.
F. F. Frothingham, Bird Machine Co.
Wm. L. Fry, Reichel-Korfmann Co.
A. E. Fuller, Merrimac Paper Co., Inc.

G

C. V. Gallagher, River Raisin Paper Co.
W. W. Galloway, Bauer Bros. Co.
J. N. Gammon, Natl. Oil Prod. Co.
E. S. Gantt, Corn Products Sales Co.
Alfred T. Gardner, Provincial Paper Ltd.
Arthur C. Gault, The W. S. Tyler Co.
Robert M. Gavin, B. F. Nelson Mfg. Co.
D. B. Gearhart, General Electric Co.
C. Ives Gehring, Oswego Falls Corp.
Wm. A. Geiger, Pulp Div. Weyerhaeuser Timber Co.
O. P. Gephart, A. M. Meincke & Son, Inc.
Harold L. Geiger, International Nickel Co.
Leo Geiser, Champion Paper & Fibre Co.
H. B. Gerber, Williams Gray Co.
W. A. Giese, Container Corp. of America.
Edward P. Gillan, Anheuser Busch, Inc.
Thomas M. Gillespie, Cheney Bigelow Wire Works.
William L. Gilman, Brown Co.
Howard L. Glass, Warren Steam Pump Co., Inc.
Mr. and Mrs. Emerson N. Glauner, Downingtown Mfg. Co.
Mr. and Mrs. E. P. Gleason, Nekoosa Edwards Paper Co.
Otto J. Goeppinger, Marcal Pulp & Paper Co.
Geo. E. Goertzen, Central Fibre Prod. Co.
Philip H. Goldsmith, The Pusey & Jones Corp.
Michael B. Gormely, Marinette Paper Co.
H. H. Gottsleben, Geigy Co., Inc.
Earl H. Grasse, Farrel Birmingham Co.
William Greeley, F. C. Huyck & Sons.
Dr. A. T. Green, Dow Chemical Co.
W. E. Greene, Stowe-Woodward.
Mr. and Mrs. Alan H. Griffin, Riegel Paper Corp.
J. Goodwillie, Beloit Iron Works.
I. W. Grimes, Standard Oil Co.
R. N. Griswold, Heller & Merz.
C. H. Grupe, Anheuser Busch, Inc.
Robert M. Guie, Philadelphia Felt Co.

H

R. W. Haddock, Escanaba Paper Co.
Donald M. Hall, Eastwood-Nealley Corp.
A. L. Hamm, Combustion Engineering Co.
L. L. Hanson, The Owen Bucket Co.
Mr. and Mrs. George Hardaker, Sinclair Co.
Acheson A. Harden, Corn Products Sales Co.
C. A. E. Harding, Shuler & Benninghofen.
Robert Harding, Morris Paper Mills.
S. S. Harkavy, Geigy Co., Inc.
Mr. and Mrs. Mace Harris, The Northwest Paper Co.
Frank A. Hart, Lombard Governor Corp.
Walter I. Harte, John W. Bolton & Sons, Inc.
Ray E. Harter, R. T. Vanderbilt Co., Inc.
Mr. and Mrs. J. D. Haskell, Dilts Machine Works, Black Clawson Co.
Otto F. Hassel, Consolidated Water Pulp & Paper Co.
Carl A. Hayden, Askania Regulator Co.
Frank Hayes, The Noble & Wood Mach. Co.
A. J. Hayes, Nekoosa Edwards Paper Co.
Mr. and Mrs. James L. Hayes, Bemis Bro. Bag. Co.
Walter A. Haynes, Natl. Biscuit Co.
Timothy E. Healey, Smith Paper, Inc.
O. E. S. Hedbring, Continental Paper Co.
J. W. Hemphill, Johns Manville Sales Corp.
G. L. Hendershot, Central Fibre Products Co.
John D. Henderson, Fritz Publications, Inc.
Frank R. Henry, Simonds Worden White Co.
R. O. Herbig, Reliance Elect. & Eng. Co.
Geo. A. Hermann, Hermann Mfg. Co.
Arthur L. Hobday, Southworth Co.
Mr. and Mrs. Fred M. Hodgemire, Hawthorne Paper Co.
Carl F. Hoelderle, Anheuser-Busch, Inc.
W. F. Hoffman, Fitchburg Paper Co.

Arthur H. Holbrook, English China Clays Sales Corp.
Jos. L. Hoolihan, Port Huron Sulphite & Paper Co.
H. A. Horan, Penick & Ford, Ltd.
Charles I. Horton, R. T. Vanderbilt Co., Inc.
George P. Hough, A. O. Smith Corp.
P. E. Howard, Bevos Machine Co.
Stuart J. Howk, Wm. Summerhays Sons Corp.
C. R. Hunsicker, Container Corp of America.
Junie C. Huskey, The Mead Corp.
W. S. Huss, Acme Steel Co.
Mr. and Mrs. Ronald W. Hynes, Newton Falls Paper Mill.
J. B. Higley, Leeds & Northrup.

I

Treff Imbleau, Provincial Paper, Ltd.

J

J. H. Jackson, W. S. Tyler Co.
Mr. and Mrs. E. C. Jacobi, Sandy Hill Iron & Brass Works.
Walter A. Johnson, Falls Paper & Powder Co.
H. B. Johnston, Allied Paper Mills.
H. Duncan Jones, Manhattan Rubber Mfg. Div., Raybestos-Manhattan.
A. C. Junge, Clinton Co.
Jack E. Johnson, Appleton Woolen Mills.

K

H. E. Karberg, Alliance Paper Mills, Ltd.
Harry M. Keating, Smith Paper, Inc.
Mr. and Mrs. Grover Keeth, Marathon Paper Mills Co.
R. D. Kehoe, Paper & Industrial Appliances, Inc.
Mr. and Mrs. M. I. Keirn, Wallace & Tiernan Co., Inc.
C. D. Kelly, Clinton Co.
L. H. Kelley, Corn Products Sales Co.
Warren F. Kendrick, Hendrick Mfg. Co.
Allan F. Kennedy, Henry Disston & Sons, Inc.
N. M. Kennedy, Penick & Ford, Ltd., Inc.
Wm. S. Kennedy, The Bristol Co.
C. H. Kent, Hercules Powder Co., Inc.
James J. Keon, Wm. Kennedy & Sons, Ltd.
J. E. Killinger, Penick & Ford.
Chas. P. Kirchen, American Cyanamid Chemical Corp.
M. P. Kistler, Socony Vacuum Oil Co.
Frank A. Kleiler, Hummel & Downing Co.
H. C. Klein, B. F. Goodrich Co.
S. Klein, Hiller & Merz.
Mr. and Mrs. Robert F. Kohs, Detroit, Mich.
Mr. and Mrs. E. H. Koontz, Reliance Elect. & Eng. Co.
F. P. Knack, F. C. Huyck & Sons.
Fred Kranhold, Kimberly Clark Corp.
F. X. Kreiling, P. & P. Co.
Fred Kruse, Chesapeak—Belmont.
Harry J. Kruse, North Carolina Pulp & Paper Co.
Ralph W. Kumler, American Cyanamid & Chem. Corp.

L

Lee J. La Barge, Maine Sea Board Paper Co.
E. P. Lacey, (Chicago), The Bauer Bros. Co.
T. E. Lagerstrom, International Nickel Co.
Mr. and Mrs. Lester H. La Liberte, Kalamazoo Vegetable Parchment Co.
Harry L. Lamb, River Raisin Paper Co.
O. F. Lane, E. I. duPont Co., Pigments Dis-
C. W. Larsen, Corn Products Sales Co.
G. T. Latham, duPont Co.
H. T. Latham, E. I. duPont de Nemours & Co.
Mr. and Mrs. Homer H. Latimer, Champion Paper & Fibre Co.
T. H. Latimer, Black-Clawson Co.
L. W. Lawrence, Bulkley Dunton Pulp Co.
Merritt Lawrence, General Electric Co.
E. M. Leavitt, Hollingsworth & Whitney.
O. W. Lemke, Taylor Instrument Co.
Herbert S. Leonard, Monsanto Chem. Co., Merrimac Chem. Div.
Mr. and Mrs. O. L. Le Roux, Northwest Paper Co.
C. E. Libby, New York State College of Forestry.
L. B. Lindsay, Reichel-Korfmann Co.
George E. Lockwood, Lockwood Trade Journal Co.
John O. Logan, Mathieson Alkali Works.
John H. Loomis, Heller & Merz.
Joe Lowden, Infilco, Inc.
A. Allen Lowe, Sandy Hill Iron & Brass Works.
T. H. Ludlow, Johns-Manville Corp.
Mr. and Mrs. Charles J. Ludwig, Mead Corp.
W. F. Luking, The Waterbury Felt Co.
Mr. and Mrs. Charles Luginbuhl, Moore & Munger.
Edward L. Lukemire, Dicalite Co.
A. C., Lutz, B. F. Goodrich Co.
S. C. Lyons, Georgia Kaolin Co.
A. J. Leighton, Babcock & Wilcox Co.
F. D. Long, Container Corp. of America.
Edward L. Lukemire, Dicalite Co.
A. C. Lutz, B. F. Goodrich Co.
S. C. Lyons, Georgia Kaolin Co.
A. J. Leighton, Babcock & Wilcox Co.
F. D. Long, Container Corp. of America

M

R. G. MacDonald, Sec., Technical Assoc. Pulp & Paper Industry.
William W. Macklem, Black Clawson Co.
E. R. MacLaren, Albany Felt Co.
H. P. Madsen, Appleton Machine Co.
H. B. Magee, Beloit Iron Works.
Mr. and Mrs. N. L. Malcove, Northern Paper Mills.
Gordon M. Markle, duPont Co.
Aldege Marleau, Lehon Co.
C. Victor Mars, Ansul Chemical Co.
Hoke Martin, Hercules Powder Co.
Mr. and Mrs. R. B. Martin, Wallace & Tiernan Co.
John C. Mathews, Wm. Cabble Wire Mfg. Co.
S. H. Matthews, The Dicalite Co.
Peter J. Massey, H. P. Smith Paper Co.
George J. Maye, Appleton Wire Works.
H. G. Mayshaw, Bird Machine Co.
James M. McAlear, Mason Neilan Regulator Co.
Robert D. McCarron, Stein, Hall & Co., Inc.
R. F. McClellan, Natl. Oil Products Co.
M. F. McCombs, Niagara Alkali Co.
Miss Louise E. McGrath, Booth Chemical Co.
W. M. McGraw, General Electric Co.
Geo. H. McGregor, Swenson Evaporator Co.
Mr. and Mrs. C. J. McMahon, Appleton Woolen Mills.
L. O. McVay, Socony Vacuum Oil Co.
John C. Meiler, Diamond Alkali Co.
H. D. Meincke, A. M. Meincke & Son, Inc.
R. H. Melin, J. O. Ross Engineering Corp.
Henry L. Mellen, Hercules Powder Co.
A. D. Merrill, Chemipulp Process, Inc.
Besse Merrithew, Fritz Publications, Inc.
Mr. and Mrs. Ollie W. Messner, Robertson Paper Box Co., Inc.
D. C. Metcalf, The Brown Paper Mill Co.
W. K. Metcalfe, J. O. Ross Engr. Corp.
O. J. Mills, The Sandy Hill Iron & Brass Works.
J. C. Mitchell, Henry Disston & Sons.
Ferd E. Moser, Sorg Paper Co.
Mr. and Mrs. Wm. H. Monsson, Hooker Electrochemical Co.
A. E. Montgomery, J. O. Ross Eng. Corp.
Don H. Montville, Shartle-Dilts.
J. C. Mooney, Appleton Woolen Mills.
H. C. Moore, Beloit Iron Works.
Walter B. Morehouse, Natl. Oil Products Co.
C. Morganstern, Stowe Woodward, Inc.
Gordon Morseth, Detroit Sulphite Pulp & Paper Co.
D. C. Murchison, Georgia Kaolin Co.
Charles B. Muzzy, E. D. Jones & Sons Co.
L. W. McFail, Oxford Paper Company.
Albert Mausolf, Fletcher Paper Co.
Larry Moore, American Coating Mills, Inc.

N

W. E. Neumeyer, Holyoke Wire Cloth Co.
F. M. Newell, U. S. Rubber Co.
A. T. Neilsen, Worthington Pump & Machy. Corp.
Mr. and Mrs. Roy I. Nilsen, Northwest Paper Co.
Robert Nivison, Jr., Improved Paper Machinery Corp.
J. H. Noble, Improved Paper Machine Co.
R. A. Nugent, Nekoosa Edwards Paper Co., Inc.
Albert A. Nyitray, Eastwood-Nealley Club.
Mr. and Mrs. J. J. Nylund, General Dyestuff Corp.
A. W. Neubauer, The Glidden Co. (Soya) Products.

O

J. J. O'Brien, Paper Mills News.
J. H. O'Connell, WPB.
S. R. Olson, Champion Paper & Fiber Co.
C. J. O'Neil, Johns-Manville, New York, N.Y.
Crawley A. Osborne, Sorg Paper Co.
K. W. Osborne, Ohio Boxboard Co.
W. O. Owens, duPont Co., Grasselli Chemicals Div.
R. A. Olson, Glidden Co.

P

Roland A. Packard, Smith Paper, Inc.
R. G. Paramore, Central Fibre Products Co.
Mr. and Mrs. Jacob Parent, Noble & Wood Machine Co.
Gilbert F. Parks, Fitchburg Paper Co.
David D. Patrick, Cheney Pulp & Paper Co.
Alfred B. Perlick, Kal. Veg. Parch. Co.
Mr. and Mrs. M. L. Peterson, D. J. Murray Mfg. Co.
H. Paul Petzold, Oxford Miami Paper Co.
G. A. Peterson, Rice Barton Corp.
M. W. Phelps, The Solvay Process Co.
Ward H. Pitkin, Oliver United Filters, Inc.
William J. Plank, Jos. J. Plank & Co.
Mr. and Mrs. A. W. Plier, D. J. Murray Mfg. Co.
M. J. Polk, N. C. Pulp Co.
George H. Pountain, International Paper Co.
J. J. Powers, Smith Paper Inc.
G. P. Prather, Lukens Steel Co.
R. K. Prince, Allis-Chalmers Mfg. Co.
Add Prout, Corn Products Sales Co.
Mr. and Mrs. William G. Putney, Philadelphia Felt Co.
Arthur E. Petersen, Acme Steel Co.

R

Mr. and Mrs. R. M. Radsch, Appleton Machine Co.
J. W. Raines, The Lindsay Wire Co.
F. G. Ramsden, Beloit Iron Works Weaving Co.
H. T. Randall, The Champion Paper & Fibre Co.
J. B. Randolph, The Ohio Knife Co.
G. E. Rausch, Interlake Tissue Co.
J. G. Rearick, Warren Steam Pump Co.
Miles W. Reif, Blandin Paper Co.
Mrs. M. W. Reif.
William Reigers, Beckett Paper Co.
O. A. Reinke, Kimberly Clark Corp.
J. A. Reitzel, Morris Paper Mills.
Mr. and Mrs. Geo. H. Rice, Kalamazoo Vegetable Parchment Co.
Mr. and Mrs. H. B. Richmond, Consolidated Water Power & Paper.
G. L. Richter, Farrel-Birmingham Co.
Douglas Robbins, Douglas Robbins & Co.
C. P. Robinson, Heppenstall Co.
R. Rockwell, Hercules Powder Co.
James Rogers II, J. & J. Rogers Co.
Stewart V. Rogers, The Sylvester Co. Management Eng.
Lucien G. Rolland, Rolland Paper Co.
Marc, Rolland, Rolland Paper Co.
Fred J. Rooney, Wisconsin Wire Works.
Harold A. Ruby, Container Corp. of America.
L. E. Russell, Mathieson Alkali.
T. J. Russell, Sangamon Paper Mills.
W. H. Russell, The Owen Bucket Co.
H. S. Rish, American Coating Mills, Inc.

S

H. B. Schaub, Allis Chalmers Mfg. Co.
Mr. and Mrs. J. Scheuermann, Cameron Machine Co.
C. J. Schmidt, J. O. Ross Engineering Corp.
H. A. Schmitz, A. O. Smith Corp.
Paul Schreiber, General Dye Stuff Corp.
Milton A. Schreiner, The Foxboro Co.
John Schuber, The Solvay Process Co.
A. M. Schultz, Chesapeak Camp Corp.
M. R. Scott, Henry Disston & Sons, Inc.
Mr. and Mrs. Norman B. Scott, Orr Felt & Blanket Co.
Walter F. Senkus, Elliott Co.
Walter L. Shaw, Heller & Merz.
F. L. Shonkwiler, Peacock Bros., Limited.
Paul J. Sievert, International Paper Co., Southern Kraft Div.
P. E. Siegler, Container Corp. of America.
Mr. and Mrs. J. R. Simpson, Champion Paper Fibre Co.
G. K. Singletary, Brunswick Pulp & Paper Co.
Harold Sinclair, American Cyanamid & Chemical Corp.

ARE YOU PROUD OF YOUR PAPER?

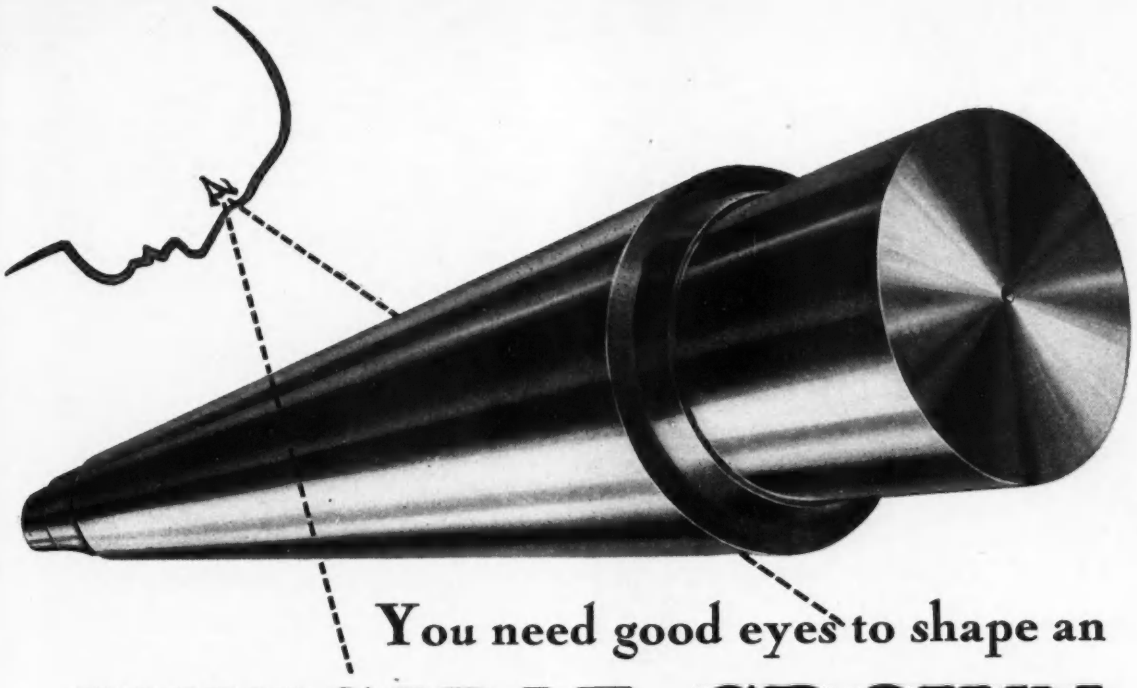
It is hard to maintain quality standards today, with many of your experienced men called away to service, and often new pulps and substitute chemicals with which to work. It requires most systematic care in paper making. We suggest as an important first step the routine use of the Cambridge Surface Pyrometer for checking roll temperatures in the drying roll train. Proper progressive temperatures here will go a long way in preventing spots, cockle, curl and blisters.

Write for bulletin 194 S

The Cambridge is made in a hand model and with the extension attachment to reach those hard-to-get-at places.

CAMBRIDGE INSTRUMENT CO., INC.,
3732 Grand Central Terminal, New York, N. Y.

CAMBRIDGE
SURFACE PYROMETERS



You need good eyes to shape an

INVISIBLE CROWN

In fact, better eyes *and greater skill* than any man can boast. That is why we developed the Farrel two-wheel, swing-rest roll grinder, which unerringly produces the correct roll shape and exact amount of crown required; and Farrel roll calipers that measure diameter and crown with "more-than-human" accuracy.

These two *aids to better roll making* were designed originally for our own use — in the country's largest specialty roll shop — where so many rolls have been produced for the paper industry over the last ninety years. Both were later made available to mills to help them maintain original accuracy in regrinding their rolls.

Send for further details of Farrel rolls, roll grinders or calipers. Or if you do not require any additional equipment just now but are experiencing difficulty with your rolls or calenders, we shall be glad to mail you a helpful booklet, "A Practical Guide To Care Of Calenders And Calender Rolls," which discusses the causes of many roll troubles and gives useful hints on grinding procedure. Write today.

FARREL

PAPER MILL EQUIPMENT

ROLLS—Any diameter from 4" to 72" and any face length up to 312", of chilled iron, extra hard Farreloy and Farrel Ni-Hard.

CALENDER STACKS—Any size up to 312" long on the face. Automatic lubrication, floor-operated lift and other modern features.

ROLL GRINDERS—Made in three sizes to take maximum diameters of 24", 32" and 42".

ROLL CALIPERS—Made in five sizes to measure rolls from 4" to 50" in diameter.

FARREL-BIRMINGHAM COMPANY, Inc.

ANSONIA, CONN.

Plants: Ansonia and Derby Conn., Buffalo, N. Y. — *Sales Offices:* Ansonia, Buffalo, New York, Pittsburgh, Akron, Los Angeles

R. H. Siple, Corn Products Sales Co.
Mr. and Mrs. A. I. Sippola, Wadhams, Div., Socony-Vacuum Oil Co.
Mr. and Mrs. H. A. Skinner, Marathon Paper Mills Co.
G. A. Slacke, Henry Disston & Sons.
Eugene H. Smith, Crossett Paper Mills.
James A. Smith, Nash Engineering Co.
Mr. and Mrs. L. J. Smith, Combined Locks Paper Co.
Leon E. Smith, Downingtown Mfg. Co.
Leonard E. Smith, Consolidated Water Power Paper Co.
Paul A. Smith, Blandin Paper Co.
Mrs. P. A. Smith.
Rolland D. Smith, Stein-Hall Mfg. Co.
Roscoe H. Smith, Reliance Elect. & Eng. Co.
V. A. Smith, Socony-Vacuum Oil Co.
David B. Snedeker, Heller & Merz.
F. A. Soderberg, General Dyestuff Corp.
Claude A. Sorg, Sorg Paper Co.
Geo. H. Spencer, Pusey & Jones Corp.
J. A. Staidl, Chesapeake—Camp Corp.
Mr. and Mrs. C. E. Staky, D. J. Murray Mfg. Co.
Avery H. Stanton, Magnus Chemical Co.
S. G. Stapley, Provincial Paper Ltd.
Ben P. Steele, Pa. Salt Mfg. Co.
M. E. Stern, National Starch Prod., Inc.
R. C. Stewart, Black & Clawson (Shartle Bros.).
J. C. Stinson, Crossett Paper Co.
Carl E. Stoke, Tomahawk Kraft Paper Co.
R. R. Stoltz, Westinghouse Elec. & Mfg. Co.
Mr. and Mrs. G. H. Suhs, The Sorg Paper Co.
J. P. Strasser, Stein Hall Mfg. Co.
Mr. and Mrs. Glen Sutton, Sutherland Paper Co.
F. O. Sundstrom, Heller & Merz.
Herbert K. Swan, Allis-Chalmers.
Cliff Swett, Stein-Hall Mfg. Co.
N. H. Sandberg, Waldorf Paper Prod. Co.
John R. Stinson, Hummel Downing Co.

T

Peter A. Talbot, Jr., Vanderbilt Co.
Don W. Taylor, B. F. Goodrich Co.
E. B. Taylor, Stein, Hall Mfg. Co.
Louis B. Taylor, Pittsburgh Plate Glass Co., Columbia Chemical Div.
M. J. Taylor, Wisconsin Tissue Mills.
Mr. and Mrs. Killey E. Terry, S. D. Warren Co.
E. L. Tewksbury, Stowe Woodward, Inc.
Ed. J. Thom, Howard Smiith Paper Mills, Ltd.
Mr. and Mrs. E. E. Thomas, Appleton Machine Co.
Edgar E. Thomas, Appleton Machine Co.
Geo. A. Thompson, Jr., B. F. Perkins & Sons, Inc.
Mr. and Mrs. Fletcher P. Thornton, Stowe-Woodward, Inc.
Al Tietig, The Ohio Knife Co.
S. E. Tomczak, Flambeau Paper Co.
Wm. H. Toppan, Fibre Making Processes, Inc.
Mr. and Mrs. R. Tourangeau, Wausau Paper Mills Co.
Benj. H. Townsend, Eastman Kodak Co.
P. Y. Tumy, General Electric Co.
James Turek, Jr., Stein-Hall Mfg. Co.
E. E. Tweed, Mead Corp.
John F. Tobin, American Blower Corp.
Carola A. Tritton, Container Corp. of America.

V

Vance V. Vallandigham, Kelco Co.
C. E. Van Buren, Albany Felt Co.
P. W. Van Kirk, Penick & Ford, Ltd.
Morris D. Van Patten, W. E. Hooper & Sons Co.
H. L. Vanderberg, A. E. Staley Mfg. Co.
E. R. Vannatta, Western Board & Paper Co.
George Van Steenbergh, Paper Mill News.
V. E. Varhus, General Mills, Inc.
Frank C. Vaughan, Hummel-Ross Fibre Corp.
Carlo Vicario, Nash Eng. Co.
C. H. Vickory, Jones & Sons Co.
H. K. Vinton, Paper Trade Journal.
Robert F. Vokes, Black Clawson-Shartle Dilts.

W

Fred Wagner, Crane Co.
Mr. and Mrs. D. J. Walsh, Parker Young Co.
Mr. and Mrs. H. E. Walter, Wood Conversion Co.
Mr. and Mrs. G. Clifton Walton, Downingtown Mfg. Co.
Kurt Wandel, Consulting Eng.
Jack Wandtke, Heller & Merz.
Frank E. Wantz, Container Corp. of Am...
N. P. Wardwell, Carthage Machine Co.
Vincent F. Waters, *Southern Pulp & Paper Journal.*
R. S. Watson, Allis-Chalmers Mfg. Co.
Mr. and Mrs. S. S. Watson, Riegel Paper Corp.
W. E. Waymire, Westinghouse Elect. & Mfg. Co.
Sam T. Weber, Black Clawson.
H. F. R. Weber, Link-Belt Co.
Ben. P. Weesner, Container Corp. of America.
H. B. Weis, Central Fibre Prod. Co.
Mrs. Arnold Weller.
Arnold J. Weller, Sutherland Paper Co.
Sidney D. Wells, Institute of Paper Chemistry.
Washburn Weston, American Wringer Co.
John P. Weidner, Hoberg Paper Mills Co.
Normal O. Weil, W. S. Tyler Co.
P. H. West, Thilmany Pulp & Paper Co.
Harry E. Weston, Fritz Publications, Inc.
S. J. Whelen, Shuler & Benninghofen.
Whipple, Cash, Beloit Iron Works.
M. J. White, The Ohio Knife Co.
M. M. Whitman, Marathon Paper Mills Co.
Frank A. Whittiger, Ciba Company, Inc.
Mr. and Mrs. A. Wiberg, Gilbert Paper Co.
J. M. Wilcox, Electric Steel Foundry.
A. D. Wilkinson, Kimberly-Clark Co.
A. B. Williams, American Wringer Co.
George E. Williamson, Strathmore and Rising Paper Co's.
A. O. Wingender, Ansul Chemical Co.
James A. Wise, Kalamazoo Paper Co.
Mr. and Mrs. Walter F. Wolfe, MacSim Bar Paper Co.
Jess G. Wright, A. M. Meincke & Son, Inc.
Malcolm Wright, Watab Paper Co.
Pete Wright, Bagley & Sewall Co.
Johanna M. Werner, Container Corp. of America.

Y

A. T. Yoder, Ontonagon Fibre Corp.
D. M. Yost, Sorg Paper Co.
C. E. Youngchild, International Paper Co.
B. A. Yule, F. C. Huyck & Sons.

Z

Mr. and Mrs. F. L. Zellers, Chillicothe Paper Co.
Dr. W. R. Zwecker, Seaman Paper Corp., Chicago.
G. A. Zinkil, Container Corp. of America.

Salvaging Paper at Ordnance Fields

Hundreds of different ways have been found at Ordnance Field Service Depots and Arsenals of the Ordnance Department, Army Service Forces, to save the taxpayers' money by developing new methods for salvage of material which in other days might have gone to waste. Of course, paper is saved and sold; but by the simple process of dumping all waste paper upon a conveyor belt and having it sorted by its different grades, Army Ordnance establishments are able to obtain a higher price from paper dealers than would otherwise be possible.

In one Ordnance Field Service Depot alone, the record of paper salvage in the first three months of 1944 totaled 754,780 pounds; with the month of March leading with 358,280 pounds. Totals in January were 208,880 and in February 187,620 pounds.

In this Depot there are thousands of technical manuals printed for Ordnance troops all over the world, giving them instructions on how to repair Ordnance fighting equipment. These manuals are prepared to fit into the well-known binder for Army regulations and odd shaped holes are punched into the printed manuals. Even the paper that is punched out is swept from the floors in the bindery, put into sacks and sold back to the paper mill to reduce the cost of operating Ordnance depots.

While the fibre containers in which shells for the 75 mm. gun are shipped overseas are not exactly paper, they can be salvaged and sent back to paper mills for crushing and the making of shipping boxes. Heretofore, these fibre containers contained the empty cartridge cases when they were shipped back from overseas after use. Ordnance Field Service found that the expense of separating the cartridge case from the fiber container was an expensive operation but it had to be done to salvage the brass cartridge cases returned from overseas.

It was found that if the fiber container and the empty cartridge could be returned separately, it would save sixty-five per cent in manpower and the fibre containers could be disposed of at a profit. The Ordnance Department arranged to have this done and the resultant economy has run into hundreds of thousands of man-hours saved and a tidy profit on the sale of the fibre containers. Wood also is a critical item and empty caliber .30 and .50 ammunition boxes are saved and remade into packing cases for the shipment of spare parts overseas.

Paper Firms To Build at Toronto

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., May 29, 1944.—Canadian Pad and Paper Company, Ltd., 240 Madison Avenue, and Eaton, Crane & Pike Company of Canada, Ltd., 375 Madison avenue, who have been very closely associated in the past, have merged their interests still closer, it is understood, and have purchased eleven acres of land in the northwest section of the city, where they plan to erect a large modern plant as soon as priorities can be obtained.

Negotiations with York township authorities were completed last week when representatives of the new company handed over to the township council a cheque for $1,000, the balance of $9,000 to be paid June 15. The property is situated a short distance west of Dufferin street and north of Eglinton avenue in a growing industrial district with ample shipping facilities. The company, under the direction of Roy C. Hill, plans the erection of a manufacturing plant to cost $400,000. The property provides ample room for manufacturing and extensive recreation grounds for employees who will number at least 200.

The new plant will bring the activities of both the old companies under one roof and thus facilitate an increase of business in the lines manufactured.

Song of the Desert

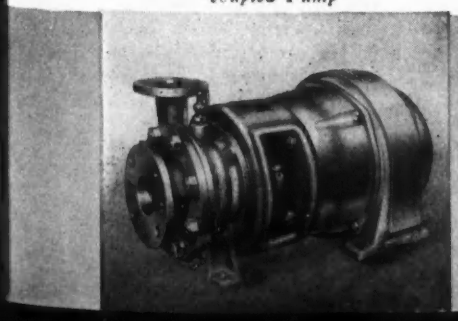
NO longer do the harsh overtones of sun and cactus, wind and boiling sun echo through the vast emptiness of the desert. Today orchards give a lush soliloquy to the muted voices of happy farm workers. The vibrant sun is now a friendly ally for the thirst quenching water. Lombard Irrigation Pumps have played their part in transforming death into life. Lombard Hydraulic Equipment is doing vital work in many fields.

LOMBARD *Governor* CORPORATION

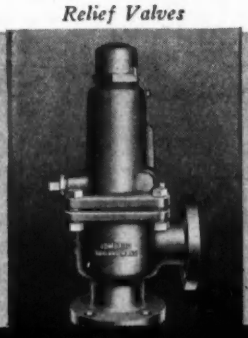
ASHLAND - MASSACHUSETTS

Sales Office: 60 East 42nd Street, New York 17, N. Y.

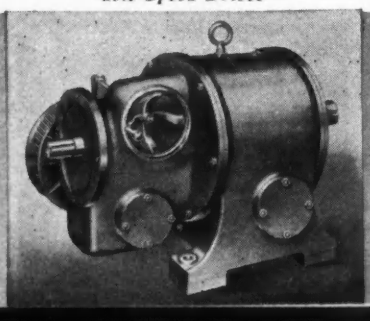
The Lombard Close-coupled Pump



Relief Valves



Compact, efficient Variable Speed Drives



Wood Handling Methods at Northwest Paper Company*

By Mace Harris[1]

Abstract

The present practices of the Northwest Paper Company from wood yard to chip bins are described together with the equipment involved. An average of 450 cords is handled per 24 hours (22.5 operating hours) with an average operating crew of 21 men per each 8 hour shift.

In the manufacture of pulp, wood continues to be the largest single item of cost. While pulp mill superintendents have always been aware of this fact and have endeavored to get the largest yields of pulp possible, they have, and I believe the management as well has to a large extent, neglected the mill wood rooms and wood handling operation. True, there has been some published work on the efficient storing of wood to prevent rot, and considerable research done in finding out the best quality of wood for pulp production; that is, whether or not a slow growing or fast growing tree, whether the butts or the tops, etc., make the best pulp. However, practical use of this information has not been obtained due to the fact that such superselective logging cannot be applied at this time. Right now, our main concern is to obtain a sufficient supply of wood in our yards, and the superintendent must make the best of it by getting all the pulp he can out of every cord of wood available to him. Since the price of this wood is extremely high, and the labor cost for handling it is much higher than normal, every effort should be made to save both the wood and the labor expended on it as much as possible.

We do not have the best wood room or the best system of handling at The Northwest Paper Company, but we do a reltaively good job in storing, barking, and preparing the wood, putting chips in the bin at a low handling cost without an unnecessary amount of waste. Our wood is received by truck and rail in the conventional 100 inch length, and is transferred to and from storage piles with a railroad steam crane. This, I believe, is generally recognized by the Lake States mills as being the cheapest and most satisfactory way to handle and store wood. I know of no mill in our territory that receives the larger portion of its wood by rail and truck in any shorter lengths; and I think the stackers, as conventional in Canada with the 4 foot river driven wood, are obsolete as far as we are concerned.

Conveying

We have found the cheapest way to get wood into the wood room is by loading on company owned flat cars with the steam crane and spotting them as needed along an unloading chain where they are unloaded by hand labor. We are handling about 450 cords per day and we cannot figure any cheaper method of unloading that would give us a rate of 20 cords per hour throughout the 24 hours of the day, with the man hours involved.

In order to avoid a miserable job of turning wood from a drag conveyer to a slashing conveyer, we have used a log pond for many years. We believe it is the most economical way to make the necessary turn. The pond helps, to some extent, in wetting the wood, however, the amount of bark loosening effect depends upon the length of time the wood is soaked and the temperature of the water. The pond retains the wood for about a half hour which apparently is too short a time for any real effective soaking. The pond does wash off considerable cinders, stones, and dirt, thus saving the slasher saw somewhat. The wood is carried to the discharge end of the pond by circulating the water with a low head pump.

Barking

It is slashed into foot lengths, and if peeled, can go directly through a wshing drum to the chipper. If rough, it is barked in two drums, one trunnion style and one chain suspended style, both 12 by 45. Barking of wood is one of the toughest jobs we now have, and I hope some day we will have better equipment available to obtain more satisfactory results in this operation.

For several years, our sulphite pulp mill operated on peeled wood in the winter time and on rough wood in the summer time. For this rough wood season, 12,000 or 15,000 cords of rough wood were purchased the previous winter and allowed to age until the middle of June. The wood was then dumped into the river and soaked until the middle of July, when it was barked and used until the pile was completely gone. In barking this wood, it was cut to 2-foot lengths, run through two 10 by 30 drums, and hand cleaned on knife barkers. During several seasons, the whole pile averaged 24 cords per digester in terms of rough wood. We have since eliminated the river step, as well as the knife barkers, and are now filling the same digesters with an average of 20.5 cords as compared to 24 cords. This shows the enormous wood loss caused by knife barking. There is a cambium layer, sometimes called inner bark, which, when aged and water soaked, is supposed to cause a lot of dirt found in sulphite pulp. I believe there may be some truth in this, but hand knife barked rough spruce, having a considerable amount of this cambium layer remaining, resulted in no ditry pulp when cooked within a few days. We have, therefore, cut out this enormous wood waste. We now run the wood through the two large drums, sorting the wood fairly clean for bark, and have found that total bark removal is not necessary. Sticks which may have a patch of bark not entirely removed, are cleaned in a knife barker which does not have the opportunity our old style knife barkers had to cut away some 15% of the good wood. One man works on this knife cleaner and that is the full extent of our hand cleaning. We are fortunate in that we operate both a kraft and sulphite

*Presented at the meeting of the American Pulp and Paper Mill Superintendents Association, Edgewater Beach Hotel, Chicago, Ill., May 24-26, 1944.

[1]Northwest Paper Co., Cloquet, Minn.

PRESSURE

* This is the 11th of a series of informative messages concerning the meaning and significance of commonly used tests and terms employed to describe the characteristics of lubricating oils.

DRUMS! DRUMS! DRUMS!
War needs make it extremely important that all empty drums be returned immediately.

Whatever your lubricating need — extreme pressure, high or low temperature, high speed, or any other service condition — there's a Tycol oil or grease exactly suited to your specific need.

Tide Water Engineers will recommend the Tycol lubricant that meets your particular requirements. Call or write your nearest Tide Water office.

TIDE WATER ASSOCIATED OIL COMPANY

MAKERS OF THE FAMOUS VEEDOL MOTOR OIL • Eastern Division: 17 Battery Place, New York 4, N. Y.

Principal Branch Offices: Boston, Philadelphia, Pittsburgh, Charlotte, N. C.

INDUSTRIAL LUBRICANTS

pulp mill, so that the real knotty, pitchy, and dirty spruce and balsam can be culled out and set to one side, later being used in the kraft mill. I believe that much more of the dirt in sulphite pulp comes from this type of wood rather than the bark, and that the best way to clean up sulphite pulp is not to use this wood at all. We find in our current receipts that it runs about 5%. When we tried to clean this wood with a knot saw and two knot borers, we spent more labor and wasted more wood than it was actually worth. Of course, sulphite mills which are not so fortunate will have to make an effort to clean this wood because no one can afford to lose 5% of his wood pile under present conditions.

Since we operate both a chain suspended and trunnion drum, you may be interested to know that as far as we can tell there is no particular advantage in either one. The rate of barking seems to be the same and will vary from 5 to 25 cords per hour in each, depending on the age, condition, and species of wood. Repair costs over a period of years will run about the same. The chain suspended drum breaks down more often and there is more lost time during operating shifts due to minor repairs of the chains; but, the trunnion drum will come out of service for longer periods of time and the repairs will be greater in extent when needed.

Refuse Handling

While talking about barking wood, we had better take up a few points on the subject of refuse handling and disposal. Considerable bark refuse falls on the unloading log deck and is carried toward the hot pond with the logs. We have cut an opening in the bottom of this conveyor for the bark to drop through, and by the use of a cross chain, we convey it to a main chain which runs into the wood room. This main chain also carries a small amount of wood slivers and refuse from the washing drum. The bark from the two main barking drums is pressed to approximately 50% dryness. This bark is mixed with the dry bark from the unloading dock on a conveyer leading to a swing hammer crusher. The crusher, or shredder as it is sometimes called, breaks up the bark very fine so that it will burn as supplementary fuel in one of our regular coal fired boilers. Sawdust from the slasher, the chip dusters, and the vibrating screens is conveyed pneumatically and dropped on the same conveyor which carries the bark toward the boilers. This shredded fuel mixture is finally blown into the boiler furnace and burns largely in suspension over the stoker-fired coal fuel bed.

Sorting

We do our wood sorting on a 48-inch wide rubber belt instead of on a conventional chain deck. We got this idea from the Great Lakes Paper Company at Fort William, Canada. As far as I know, we are the only two mills using a rubber belt for this purpose. It is arranged with plenty of room, run slow enough, and gives the sorter a good chance to pick out and return unbarked wood. This arrangement also includes a novel wood return to the drums, whereby the belt in its return takes cull wood back with it. The first cost of this belt is quite high when compared with chains, but the upkeep on it is low and we feel it will last many years.

Since the largest spout we have in our chippers is 14 inch, it is necessary to do considerable wood splitting at times. We have arranged a large-log deck parallel with the belt, and at the same level, equipped with two chains for dragging logs to a mechanical splitter. This makes for easy handling of the large logs and one man on the splitter is not busy full time. His other duties include watching the chip screens, cleaning up around the belt, and sparing off other men at odd times.

For the purpose of washing the peeled wood we use, and for rewashing the rough wood from the sorter belt, we pass our wood through a 10 by 30 suspended drum operating in a water vat. This does a good job and requires no one to watch it, the wood being discharged into a chute, slid to a kicker roll, and carried to the chippers on a belt conveyer that is just wide enough for one large log. You see, the layout of the wood room machinery is arranged so that all of the wood which comes onto the belt feeding the chipper is to be chipped. The operator has only to space the logs on the belt a very little.

Chippers

We believe that a relatively small chip is desired, and from the type of operation used in our mill for several years, we have proved to ourselves that chips as short as one-half inch will make better than average pulp. We do not chip this short now because there would be too much sawdust waste.

We have two multiple knife chippers. One is a rebuilt 84-inch machine equipped with a new twelve-knife disc and driven by a 300 h.p. wound rotor motor, V-belt connected, with the chipper shaft running at 300 r.p.m. The other is a new 64-inch ten-knife chipper with a 350 h.p., 300% pull out synchronous motor mounted on the chipper shaft, the chipper shaft running at 450 r.p.m. Generally only one chipper is in service at a time, and a switch-gate on the feeder belt permits shunting of wood to either chipper. With two chippers we can maintain continuous operation and lose no time while changing knives.

On this type of multiknife chipper, card breakers are not necessary. Four plates of iron welded to the chipper disk will blow the chips over to a conveyer belt several feet above and to one side of the chipper. At the same time, the cards are completely broken even with aspen wood which has a tendency not to break easily.

We believe conveying chips should be done on rubber belts whenever possible as they are the cheapest in the long run. At present we use a bucket elevator to take the chips to the chip screens from the belt conveyor away from the chipper, and it does not work out satisfactorily. We have lost more time in our wood room due to plug-ups, torn off buckets, and general grief with this piece of equipment than with any other we have. In cases, like our own, where the required elevation precludes the use of rubber conveyor belts, we believe that one of the new type conveyors such as Redler or Bulk-Flo, equipped with a surge bin and automatic feeder would prove much more economical and satisfactory than a bucket elevator.

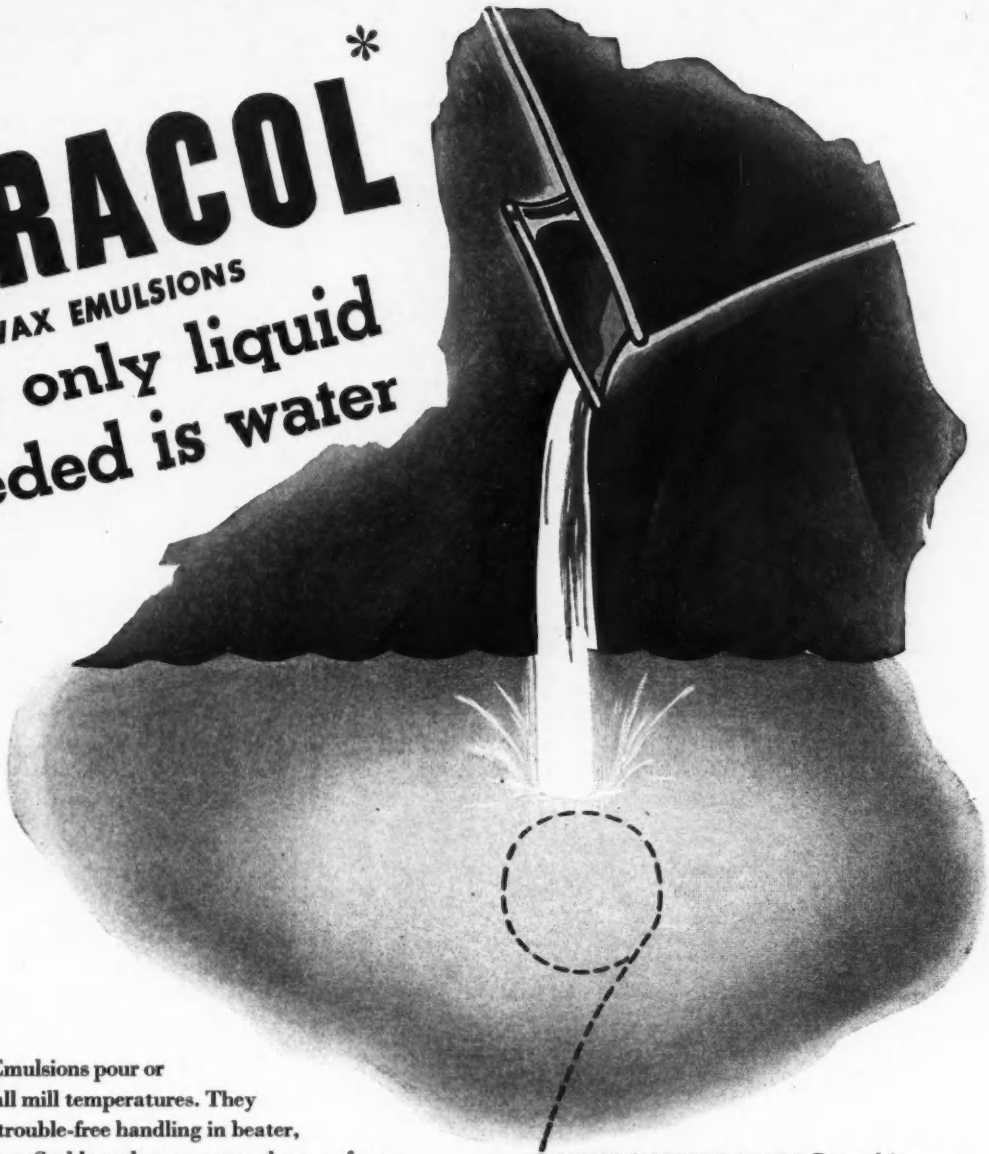
Chip Screens

Chip screens are of the fast vibrating type which do a good job of sizing out the over size chips. They also do a good job removing sawdust if the bottom deck is kept clean. It is necessary to clean this lower deck at least twice a day. Since we have two screens, we can shut one down and cut the wood room capacity to two-thirds while doing this. In order to provide the cleanest possible chips for our sulphite

PARACOL*

WAX EMULSIONS

The only liquid needed is water



The Paracol* Wax Emulsions pour or pump like water at all mill temperatures. They mix perfectly, offer trouble-free handling in beater, tub, calender or coater. Stable on long storage, they are formulated to break only where and when the wax is needed . . . in the presence of acid or alkali or heat. It's easy to use Paracol whenever paper needs wax.

Your PMC technical representative knows how to obtain the best results with Paracol—through our more than 15 years experience in making emulsions and applying them to papermaking problems. For further information on the use of Paracol emulsions in your operations, use the convenient coupon below.

● **WHAT HAPPENS HERE?** Paracol is mixing with water like cream in your coffee—hot or cold. The wax particles of Paracol Emulsions are so microscopically small that they disperse quickly and uniformly in water solutions of papermaking materials.

HERCULES

CHEMICALS FOR INDUSTRY

*Reg. U. S. Pat. Off. PMC by Hercules Powder Company

HERCULES POWDER COMPANY
INCORPORATED
Paper Makers Chemical Department
962 King Street
Wilmington 99, Delaware

Gentlemen:

My wax problem is.....

Please send me information on.....

Name.....Title.....

Firm.....

Address..... PI-44

mill, these chip screens use a very coarse wire on the sawdust deck and the sawdust which falls through is rescreened on a 3 by 6 foot vibrating screen. It is surprising the amount of good wood satisfactory for kraft manufacture which is saved on this screen. I believe the use of this double screening method would provide cleaner chips for a sulphite mill operating alone. Following the main vibrating screens, the chips are cleaned in two chip dusters. We find that these remove very little actual dirt, after the chips have gone through the foregoing double screening system.

With the multiple knife chipper, there are practically no long stringy slivers to be rechipped and not too many over size chunks. I believe almost any type of rechipper would give good results.

With the operations in our wood room, as I have attempted to outline them, we handle—day in and day out—an average of 450 cords per 24 hours, operating the wood room on three 8-hour shifts. This schedule generally provides about 22.5 hours actual net operating time, or an average of 20 cords per hour. All but about 90 cords (peeled poplar) is rough wood — spruce and jackpine — and we believe that these operations result in a near-minimum loss of good wood.

These operations are also quite economical from the standpoint of labor required, particularly when one considers that 360 cords per day, or 80% of the total load of 450 cords, is rough wood. Over all, the operating crew averages 21 per shift, or 504 man hours per day to handle the wood off the flat-cars, through the wood room and into the digester chip bins. This is a little over one and one-tenths man hours (1.12 to be exact) per cord of wood handled.

Under favorable barking conditions, these operations can handle 100% rough wood with the same crew and, at times, has actually done so.

J. E. Underwood To Direct Research

PITTSBURGH, May 29, 1944—J. M. Avery, vice-president in charge of research and development of Diamond Alkali Company, has announced the appointment of J. E. Underwood as director of research. Mr. Underwood will be located at the Diamond Research Laboratories at Painesville, Ohio.

Prior to his present position, Mr. Underwood was associated with the WPB's Office of Production Research and Development. He holds degrees of M.A. and A.B. from Wabash College, and formerly held teaching fellowships at Ohio State University and the University of Missouri.

Mr. Underwood has also been associated with Mellon Institute of Pittsburgh, U. S. Bureau of Mines, Radium Company of Colorado, Radium Emanation Corp., National Lime Association and the Pennsylvania Salt Manufacturing Co.

Harry W. Doremus Surprised

May 19 was a gala night with Charles F. Hubbs & Co., when there was a family gathering of all the executives, office people, warehouse men and truck drivers from the Lafayette street headquarters, Beekman street branch, Hollis, Bridgeport and Troy in the Le Perrequet suite of the Waldorf Astoria. The occasion was the celebration of the 50th anniversary of Harry W. Doremus' connection with Charles F. Hubbs & Co., of which he is vice president and secretary.

A pleasant reception took place at 6:30 followed by a dinner at which R. C. Kettles, Jr., presided. No formal speeches were made but there were a number of presentations of handsome gifts all of which showed the affection and esteem in which "Harry" was held by all connected with this old paper house.

It was strictly a "business family" affair, the only outsiders being Mrs. H. W. Doremus, Mr. Doremus' daughter, Mrs. Walter Johnson, and his brother, Mr. David Doremus. The entire party was a complete surprise to "Harry" who thought that he was merely going to dine out with his fellow officers.

One of the high spots of the occasion was the singing of several of her father's favorite songs by his daughter, Mrs. "Shirley" Johnson. The decorations, as befitted the occasion were all yellow tulips and snapdragons, carrying out the golden anniversary motif. The guests numbered eighty-three. Dancing brought the joyous evening to a close—everyone expressing the hope that there would be another party equally as good when Harry completes his next fifty years.

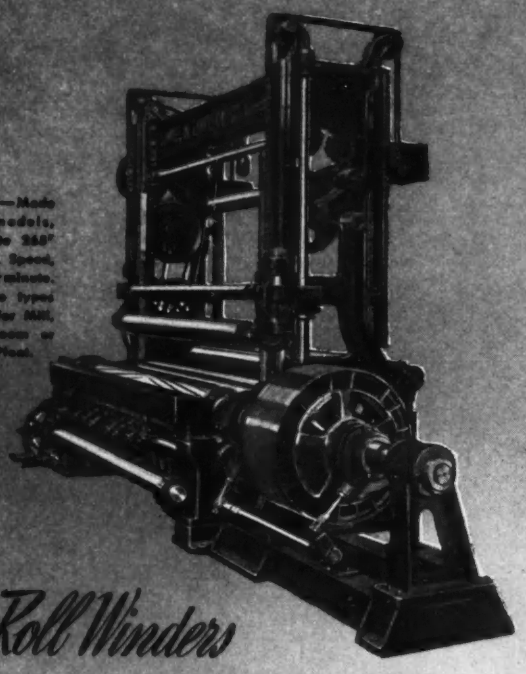
J. E. UNDERWOOD

HARRY W. DOREMUS

EVER DUNK A MAP ?

Long immersion in sea water or tropical downpours have no ill effect on the Army's new maps. They can be wrung out and dried because they're printed on water-proof paper. What's more, by using fluorescent inks, maps can be read in the dark, without lights. Where do these developments fit into the civilian economy? And who is going to graze first in these lush new fields opening up for the paper industry?

SAMUEL M. LANGSTON COMPANY, CAMDEN, NEW JERSEY



TYPE "DA"—Made in three models, widths up to 260" and above. Speed, 2000 feet per minute. One of five types and sizes for Mill, Finishing Room or Converting Plant.

LANGSTON *Slitters and Roll Winders*

No Cut in Essential Sack Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., May 31, 1944—There will be no restriction on the use of paper shipping sacks required for the shipment of essential products, members of the Paper Shipping Sack Industry Advisory Committee were told by Burton A. Ford, of the Paper Division of the War Production Board, at a recent meeting here.

In discussing proposed amendments to the paper shipping sack Order L-279, Mr. Ford said today that the committee was in agreement with the principles involved and the changes planned to insure an adequate supply of this type of containers when specifically required.

Certain hydroscopic products, having the property of absorbing and condensing moisture from the air, and deliquescent products having a tendency to melt or liquefy, must be shipped in special sacks, Mr. Ford pointed out, or they are useless when they reach their destination. Paper shipping sacks of this type include single-wall, duplex or multi-wall paper sacks designed for use as primary containers for packaging particular commodities for storage or shipment, or for enclosing a number of packages of a commodity as a single shipment or overslips for covering a single package. Paper shipping sacks do not include ordinary paper bags intended for use by grocers or retailers, although sometimes erroneously so classified, Mr. Ford said.

Among the subjects reviewed for the benefit of the committee members by officials of the WPB were increased production of paper sacks, the labor and transportation situations, the increased production of pulpwood and pulp, and the reuse of all available second-hand shipping sacks.

Present Ambulance for Overseas Duty

PHILADELPHIA, Pa., May 31, 1944—On May 6, N. D. Isen and A. B. Kehr, principals of Enterprise Paper Company and Paramount Paper Products Company, respectively, joined in presenting a new model field ambulance to the United States Army, in honor of their employees serving in the armed forces.

The ambulance, driven from the Army Ordnance Depot at Reading, Pa., by Corporal George Sell, of Cumberland, Md., was accepted for the Army by Colonel Samuel Creighton, U.S.A., in a brief but inspiring speech which highlighted the impressive ceremony. Other speakers were Hon. John E. Sheridan, member of Congress from the 4th Pennsylvania district, Sgt. Henry W. Kennedy, Bristol, Va., recently returned from action overseas; Mr. Isen and Mr. Kehr. The presentation was witnessed by employees of both companies and the families of those in service.

Two small metal plates, appropriately inscribed, were turned over to Col. Creighton for attachment to the ambulance before shipment overseas.

W. A. Dempsey Gets His Wings

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., May 29, 1944—William A. Dempsey, formerly of the staff of the Century Paper Company, Inc., received his wings in the Aviation Corps at Pensacola, Florida, May 26, so that he is now an ensign.

To Open Paper Bids June 12

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D, C., May 31, 1944 — The Joint Congressional Committee on Printing will open bids on June 12 for paper for the use of the Government Printing Office for the three months period beginning July 1. The committee will meet June 19 to discuss awards. Bids will be asked on the following paper:

1,500,000 pounds newsprint paper.
200,000 pounds telephone book news.
4,750,000 pounds machine-finish book paper.
100,000 pounds antique book paper.
6,000,000 pounds offset book paper.
80,000 pounds lightweight machine-finish book paper.
50,000 pounds 50% antique book paper.
2,300,000 pounds supercalendered book paper.
1,300,000 pounds machine-coated book paper.
2,100,000 pounds mimeograph paper.
250,000 pounds U S M O safety writing paper.
9,180,000 pounds writing paper.
3,165,000 pounds map paper.
1,010,000 pounds manifold paper.
2,960,000 pounds bond paper.
1,080,000 pounds ledger paper.
1,005,000 pounds index paper.
305,000 pounds cover paper.
340,000 pounds manila paper.
100,000 pounds kraft paper.
40,000 pounds manila tag board.
500,000 pounds calendered tag board.
80,000 pounds jute tag board.
65,000 sheets railroad board.
120,000 pounds wood bristol.
5,000,000 pounds postal card bristol.
110,000 sheets pressboard.
300,000 pounds news board.
220,000 pounds binder's board.
40,000 pounds chestnut coverboard.

In cases where more than 1,000 reams are called for, proposals will be received for 1,000 reams or more.

Sets Up Weights of Tag Board

WASHINGTON, D. C., May 31, 1944—New standards of grades and weights of converter tag boards, dealer tag boards, and file folder stocks were established today by the War Production Board's Paper Division in an effort to extend the area of these grades of paper all in short supply, Charles Dynes, of the Paper Division stated.

An increase in area or yardage is expected to result from the simplification and standardization effected by amendments made to Schedule XVI of Limitation Order L-120, Mr. Dynes said. "In other words," he explained, "while the total tonnage of about 100,000 tons of these types of paper is all that can be produced this year from the pulp available, we hope that more paper by area can be made, and thus relieve the shortage."

As many specialty papers and paperboards as may properly be included will be brought under the control of this order to conserve pulp and paper, it was pointed out. Due to the continued shortage of labor, equipment and transportation, the situation in the pulp and paper industry is becoming very critical.

Specifically, the schedule now limits the grades, colors, weights, thickness, and sizes of specialty papers manufactured, although under certain conditions, the production of special grades is permitted.

Consolidated Signs Agreement

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., May 29, 1944—The twenty-sixth annual agreement between the Consolidated Water Power and Paper Company, Wisconsin Rapids, Wis., and organized labor was signed May 26. The contract covers the company's mills at Wisconsin Rapids, Biron, Stevens Point, Appleton, and the new plastics division at Wisconsin Rapids.

Representing the company in the negotiations were L. J. Barrette, general personnel manager, C. E. Jackson, mill manager at Wisconsin Rapids; W. E. Beadle, mill manager of the Biron division; James A. Rush, Stevens Point; L. E. Smith; Interlake division, Appleton, and John Chiswell, plastics division.

Four unions are parties to the agreement. They are: International Brotherhood of Paper Makers; International Brotherhood of Pulp, Sulphite, and Paper Mill Workers; International Brotherhood of Electricians; and International Association of Machinists, all affiliated with the American Federation of Labor.

L. C. Wipperman served in the capacity of chairman at the negotiations, and the union representatives were: Anthony J. Pusateri, Chicago, for the electrical workers; Harley F. Nickerson, Milwaukee, machinists; Raymond Richard, Wisconsin Rapids, for the pulp and sulphite workers; and Ernest L. Lambton of Albany, N. Y., and Emil A. Noren, Wausau, Wis., for the paper makers.

One of the principal new provisions grants an extension of the vacation plan whereby employes with more than five years' employment will receive two weeks' vacation with full pay, instead of the customary one week. The company also agreed to take over the payment of dues to the Employees' Benefit Association and to pay a night shift premium of three cents per hour if approved by the War Labor Board.

A specific understanding was brought about between the company and the paper makers concerning the method of negotiating Sunday operations. The company and the unions retain their maintenance of membership clause, and as in former years, the agreement provides for the arbitration of disputes at the request of either party. This provision for peaceful settlement of differences has been in force for many years. Neither side has found it necessary to avail itself of the arbitration clause.

Inspects School Forests

School forests of Wausau, Wis., and Mosinee, Wis., high schools were inspected recently by George A. Duthie, Washington, D. C., chief of community forests with the United States Forest Service. He took pictures of both projects with a view to writing about them for the purpose of interesting schools in other states in similar projects.

He said that he has traveled extensively through many states in his educational work and that he has found greater progress in school and community forests in Wisconsin and Michigan than in other states.

"I believe that after the war there will be an upsurge in community as well as in government and private forestry projects," he said. "The war has brought home to the people the realization that wood is a vast economic material and that America is just entering into an era of the development of this material by the paper mill and cellulose industry. Instead of industry turning away from wood as a raw material, it is just beginning to appreciate what can be done with wood."

Sends Pulpwood To Puget Sound Mills

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., May 31, 1944 — Approximately 32,500,000 board feet of hemlock and balsam pulp logs will be released by the Canadian Government for export from the Canadian coastal area in British Columbia to the Puget Sound area of the United States, according to a recent agreement between the Forest Products Bureau of the War Production Board and the Timber Comptroller of Canada's Department of Munitions and Supplies, WPB announced today.

The Forest Products Bureau has found it necessary in the interests of the war requirements of the armed forces of the United States and the Allied nations to allocate this amount of pulp logs to three pulp manufacturing companies in the Puget Sound area. Harold Boeschenstein, acting director of the bureau, said. He added that this allocation was based entirely on the highest essentiality of production for direct military uses.

Mr. Boeschenstein explained that it was necessary to allocate the total amount of logs at this time, as shipment must be started immediately if delivery is to be completed before weather conditions interfere with the water movement of logs. In the event future war requirements for the various grades of wood pulp change the relative essentiality of the output of mills in this area, the Forest Products Bureau proposes to take this into account and take such steps as are necessary to adjust distribution of supply so as to best serve changing war needs.

To Direct Bagley & Sewall Sales

[FROM OUR REGULAR CORRESPONDENT]

WATERTOWN, N. Y., May 29, 1944—Christopher C. Crusius, a veteran in the designing and selling of papermaking machinery, has been appointed engineering and sales director of the Bagley & Sewall Company, according to announcement. Several years ago he became affiliated with the Industrias Klabin de Parana, Brazil, as consulting and purchasing engineer and about that time the local concern successfully negotiated the sale of several papermaking machines to that company. His position here is newly created and results in no displacement in the concern's established force. He completed his college training and received his engineering degree in one of the outstanding German technical universities several years ago and later became identified with the Cliff Paper Company, at Niagara Falls. A short time later he joined the engineering force of the Crown-Williamette Paper Company and after several years of service was placed in charge of engineering. He remained in that position until 1926 when he returned east to take a responsible position with a large import concern as consulting and sales engineer.

Alfred B. Clark Dead

Alfred B. Clark, for many years president of the J. O. Ross Engineering Corporation in New York City, passed away suddenly on May 27. Mr. Clark was stricken while in Atlantic City attending the Foundry Manufacturers Convention. He was widely known throughout the heating, ventilating, drying and air conditioning industries and had been associated with the J. O. Ross Engineering Corporation since 1921 when the business was founded.

Form Council For Stream Improvement

The National Council for Stream Improvement (of the Pulp, Paper and Paperboard Industries) Inc., 271 Madison Avenue, New York 16, N. Y., has announced the establishment as of May 24, 1944, of a multiple industrial fellowship in Mellon Institute, Pittsburgh, Pa., that will soon begin operation. The comprehensive research program of this fellowship, which will be conducted by specialists and for which the Institute will provide complete facilities, will pertain to the development of satisfactory methods for the disposal and utilization of wastes from the manufacture of pulp, paper and paper board. The personnel of the fellowship will soon be named.

For many years Mellon Institute has been active in evolving suitable waste-treatment processes for the coal, coke, iron and steel, chemical, and other industries. The institution has also been carrying on many investigations for public good that have included broad attention to problems in hygiene, including the abatement or control of urban smoke and dust and of stream pollution. The Industrial Hygiene Foundation has its headquarters in the Institute.

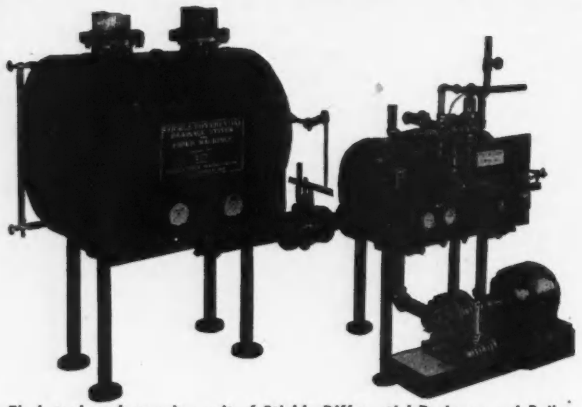
The investigational and developmental program of the National Council for Stream Improvement will draw from all this experience and will get the constant cooperation of the Institute's health, engineering, sanitary, cellulose, and paper experts. The aim will be to develop new economic procedures for eliminating stream contamination resulting from the discharge of wastes. Pollutive materials of the industries concerned will be investigated thoroughly with the objective of evolving novel and effectual methods for processing these wastes, to secure values from them, and to gain information of usefulness to individual companies in coping with their particular disposal problems. The fellowship staff will likewise coordinate the research efforts throughout its field.

According to Dr. E. R. Weidlein, director of Mellon Institute, "usually industrial waste treatment has been financially unprofitable, but in many industries by-products can be recovered which will bear at least a portion of the cost of processing. Like the pulp and paper industries, leather manufacturers are promoting research on improved waste-treatment processes, and the food and beverage industries are constantly on the alert to find and to adapt new procedures for disposing of wastes. Similarly other industries are planning researches on their waste waters for their own and public benefit. Every major pollution-abatement project must get specific scientific attention and be thoroughly studied from the standpoints of the effects on the welfare of the community and on the industry involved. In wartime we have unavoidable increases in the discharge of waste waters to streams and in the pollution of air by smoke."

It is thought at Mellon Institute that engineering advances in the future will bring better appliances for treating wastes, that scientific investigation will uncover new uses for many materials now wasted just as it has done in the chemical industry.

STICKLE DRAINAGE AND CONTROL

UP TO 20 PER CENT
STEAM SAVING



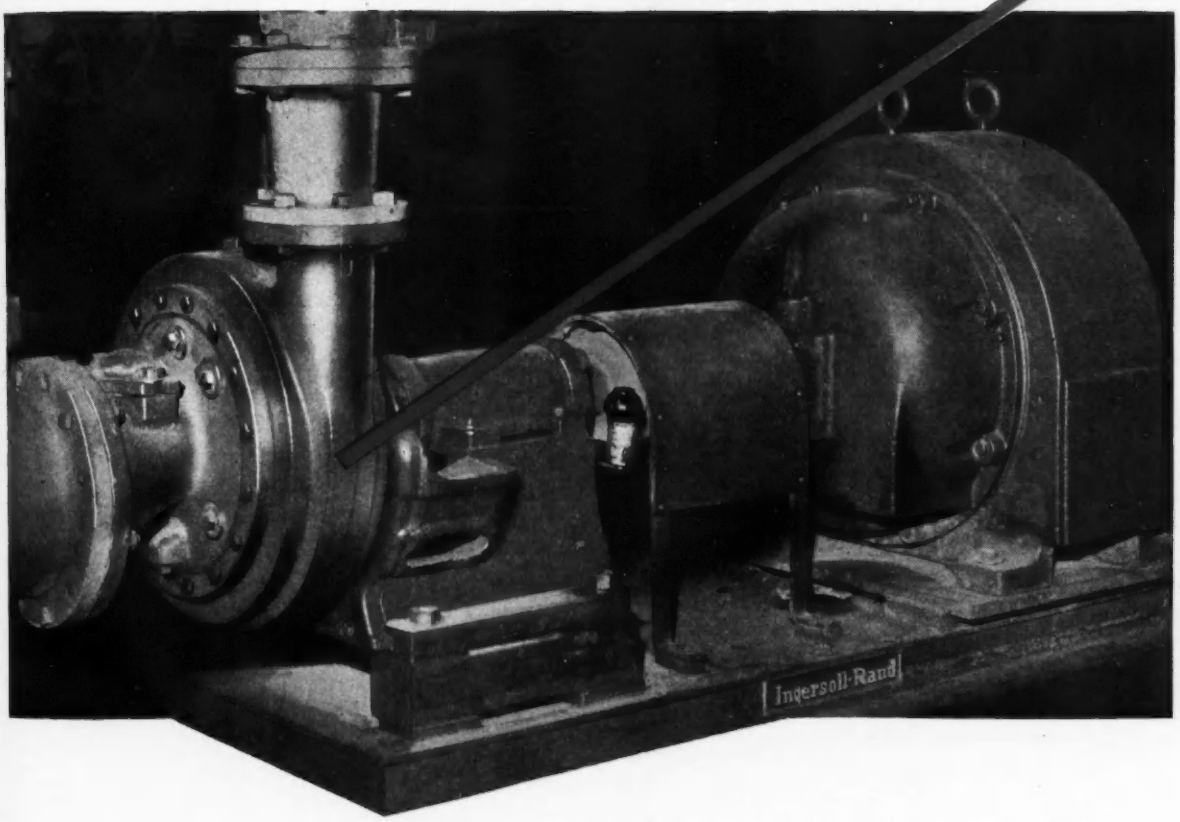
Flash tank and pumping unit of Stickle Differential Drainage and Boiler Return System for Paper Mills.

● Important steam saving is possible with Stickle Differential Drainage and Control. Mills operating paper and board machines equipped with Stickle Drainage and Control report savings up to 1200 pounds of steam per ton of paper dried. Compilation of savings effected by a large number of installations, with maximum and minimum figures rather fairly representing extremes of conditions to be encountered, show an average close to 20 per cent.

Stickle Differential Drainage and Control makes possible maximum temperatures with minimum steam consumption, resulting in high production efficiency. Besides affording a big saving in steam costs and eliminating waste of steam in production processes, it assures correct drainage of condensate and air, permits establishment and maintenance of desired moisture content, increases production and reduces quantity of substandard product.

Stickle
STEAM SPECIALTIES COMPANY
2245 VALLEY AVENUE • INDIANAPOLIS, INDIANA
FOR 40 YEARS REDUCING STEAM COSTS IN PAPER MILLS

NO VACATIONS FOR PAPER-MILL PUMPS



PAPER MAKING is an around-the-clock process . . . *and paper mill pumps must stay on the job.* Ingersoll-Rand pumps for the pulp and paper mill are built to operate "without vacations."

I-R engineers have made these pumps accessible and have made all wearing parts easy to replace. But more than that, they have made them "tough." Large shafts and bearings, and heavy casings together with careful attention to stuffing-boxes and other details make I-R pumps ideal for paper-mill service.

There is a suitable Ingersoll-Rand pump for practically every paper-and-pulp-mill application from the power plant to the paper machine. Ingersoll-Rand Company, Cameron Pump Division, 11 Broadway, New York 4, N. Y.

Ingersoll-Rand

10-409

CENTRIFUGAL PUMPS • CONDENSERS • COMPRESSORS • TURBO-BLOWERS • ROCK DRILLS • AIR TOOLS • OIL AND GAS ENGINES

American Pioneers

First Newspaper in America was published at Boston in 1704. It was printed by B. Green and sold by Nicholas Green at his shop near the Old Meeting House.

THE BOSTON NEWS LETTER is no longer "news," to those having antiquarian interests. But it is another interesting example of the pioneering spirit of New England.

Neither is it "news" that DRAPER BROTHERS COMPANY, woolen manufacturers since 1856, are manufacturing paper makers' felts of excellent quality.

In case you have not been a recent purchaser, it would pay you to try a **DRAPER FELT.**

Draper Felts For Efficiency

DRAPER BROTHERS COMPANY

Woolen Manufacturers Since 1856

CANTON, MASS.

OUR REPRESENTATIVES *to serve you*

L. H. BREYFOGLE, Kalamazoo, Mich.

RALPH E. BRIGGS, Canton, Mass.

W. L. CAMPBELL, Savannah, Ga.

E. R. LELOFF, Vancouver, Wash.

CHAS. E. BERTSCHY, Milwaukee, Wis.

Stream quality will then be improved. The Institute's experts have stressed the point, however, that communities must also do their share by treating their sewage.

The Executive offices of the National Council for Stream Improvement (of the Pulp, Paper and Paper Board Industries) Inc., will be located at 271 Madison Avenue, New York City. The organization is supported by contributions from pulp, paper and paper board manufacturers, such contributors being assessed on a tonnage basis and representing the greater part of the total pulp, paper and paper board produced in the United States. In addition to the fellowship established at Mellon Institute, fellowships and other research programs will be established at other Institutions, Universities, and Research Organizations in the various regions of the United States where urgent industry problems exist, all of these research activities being under the general supervision of Mellon Institute and the National Council's Board of Governors and staff.

The officers and the board of governors of the National Council are as follows:

Chairman, Board of Governors, Geo. E. Dyke, president, Robert Gair Company, Inc.; Treasurer, J. D. Zink, president, Strathmore Paper Company; Executive Secretary, Russell L. Winget; Technical Supervisor, Dr. Harry W. Gehm.

Board of Governors: D. K. Brown, president, Neenah Paper Company; Alexander Calder, president, Union Bag and Paper Corporation; Hugh J. Chisholm, president, Oxford Paper Company; U. M. Dickey, president, Soundview Pulp Company; D. C. Everest, president, Marathon Paper Mills Company; R. G. Fairburn, president, Berst-Forster-Dixfield Company; R. K. Ferguson, president, St. Regis Paper Company; Sydney Ferguson, president, Mead Corporation; P. H. Gladfelter, president, P. H. Glatfelter Company; R. A. Hayward, president, Kalamazoo Vegetable Parchment Company; J. H. Hinman, president, International Paper Company; J. L. Hobson, vice-president, St. Croix Paper Company; G. W. Mabee, president, National Folding Box Company; Reuben B. Robertson, executive vice-president, Champion Paper and Fibre Company; Dwight L. Stocker, president, Michigan Paper Company of Plainwell; George R. Wallace, president, Fitchburg Paper Company; J. D. Zellerbach, president, Crown Zellerbach Corporation; and J. D. Zink, president, Strathmore Paper Company.

Shows Packaging Picture at Waldorf-Astoria

The Celanese Celluloid Corporation, division of the Celanese Corporation of America, 180 Madison avenue, New York, presented the premier showing of its motion picture, "Proving Ground," at the Waldorf-Astoria Hotel, New York, on May 24. This initial showing was for the press and a good representation was present.

The picture graphically portrays the importance of proper packaging for transporting war material to the fighting front. Several scenes show actual applications of packaging innovations developed by the industry during wartime that have successfully met the severe tests of global war. The picture shows how these developments can be carried over to peacetime use. The picture is a part of a series of round table meetings with packaging people, to study wartime packaging developments through the use of plastics and interpret their possible use in peacetime applications.

One scene of the picture depicts the soldier's use of the little spirally wound package containing an ampule of iodine and equipped with a swab. The fact that the individual can break the hermetically sealed container with one hand, and without the danger of broken glass or stain of the iodine, suggests many applications of the idea in the home medicine cabinet. The important uses of "Lumarith" in ordnance wraps in delivering highly polished metal parts free from corrosion to far flung battle fields, emphasises the fact that the same idea is also applicable to shipments "just around the corner." One scene in the picture shows a soldier in the rain, marking a gun emplacement on a map covered with waterproof, transparent "Lumarith" pressure sensitive material.

The concern states that this presentation of Celanese plastic is one of the first attempts of raw material manufacturers to help users of their products to project plans for reconversion to peacetime production. The concern further states that it is a realistic effort to keep the national income at its high level and avoid the possibility of a post-war depression.

Meetings in the future will be held for fabricators, convertors, laminators, designers and all interested in the business of packaging. Additional meetings will be scheduled for manufacturers and merchandising stores using packaging material.

HISTORICAL HIGHLIGHTS OF PAPERMAKING NO. 1

"Begone!" said Emperor Nicholas.

"Begone, Henry Fourdrinier. Plague me no more."

Sadly the old man turned and left the royal presence. It wasn't his first disappointment. Thirty-eight years earlier, in 1801, he had patented the first machine to make paper on a continuous run. In 1812, he had been commissioned by Alexander, Emperor Nicholas' predecessor, to go to Russia and build machines there. He had done so. Ten years and a great fortune had been invested. He returned to England unpaid.

Fourdrinier thought that at last Fortune had favored him when, in 1839, he was granted a hearing before Emperor Nicholas. The result is history.

Flaws in patent laws prevented Fourdrinier from ever realizing on the great invention that made papermaking one of the great industries. But for an annuity given him by his friends, the papermakers, he might have died in abject poverty.

☆ ☆ ☆ ☆

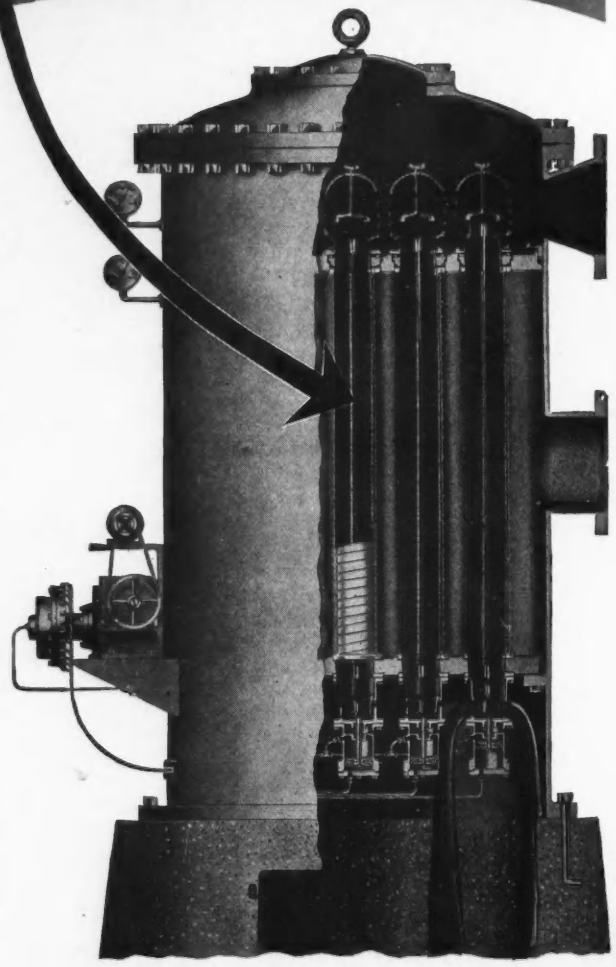
Here at Cheney Bigelow, we're mighty proud of our 102 years of service to the papermaking industry. We're proud, too, of our added wartime service of producing parts for antiaircraft guns, gliders, gyro-compasses, other war items. On May 3, it won us the Army-Navy Award for Excellence in War Production.

CHENEY BIGELOW

Fourdrinier Wires · · Dandys · · Cylinders · · Wire Cloth

CHENEY BIGELOW WIRE WORKS · 417 LIBERTY STREET · SPRINGFIELD, MASS.

ADAMS AUTOMATIC WATER FILTERS



Performance-Proved

BY THE PAPER INDUSTRY

√ *for* PRIMARY FILTRATION

PORO-SCREEN Filters are a practical method for filtering water direct from the river or other source. Removes sand and grit 15 times finer than 1/32". Delivers a large volume of filtered water suitable for general mill service in the processing of newsprint, box board and other coarse grades of paper stock.

√ *for* SECONDARY FILTRATION

PORO-STONE Filters provide effective filtration for water required in high grade paper stock. Installed following sand filter equipment, the PORO-STONE Filter eliminates finest sand, pipe scale and all foreign matter which might impair paper quality.

•

ADAMS Filters (both PORO-SCREEN and PORO-STONE) are designed for continuous, automatic operation. No moving clearances to pass foreign material—no shut-downs required by back-wash cleaning—very little attention needed. *Constant filtration assured at all times.* Built in several sizes to meet your requirements. Write for Bulletin 901.

★ R. P. ADAMS COMPANY, INC. ★

77 CHICAGO STREET, BUFFALO, N. Y.

ADAMS PORO-STONE AND PORO SCREEN FILTERS

COOPER DENSICAST

STAINLESS CASTINGS

Stronger ..... More Corrosion-resistant

Their superior grain refinement makes Cooper Densicast stainless castings stand up longer. They have higher physicals and greater resistance to corrosion—without altering the chemical composition of standard analyses such as types 312 (29-9), and 316 (18-8 SMO).

This is one of many Cooper specialties that have proved so successful in sulphite mill services. Specialties founded on long experience. We have made stainless castings for the paper industry since 1928. Some of them are still in service.

THE COOPER ALLOY FOUNDRY CO.
145 Bloy Street, Hillside, New Jersey

THE *Cooper* ALLOY FOUNDRY CO.

THE *Only* ALLOY FOUNDRY WITH *All* THESE FACILITIES

- Laboratory control over raw materials and finished products.
- Dual foundry . . . both hand and machine molding.
- Electric arc and high-frequency-induction melting furnaces.
- Centrifugally-cast castings.
- Heat treating of castings up to six feet in size.
- X-ray and Gamma-ray inspection.
- Machine shop . . . specially equipped for finishing stainless steel.
- Improved cleaning . . . including Lustracast electrolytic finishing which leaves all surfaces bright.
- Castings furnished rough, polished or fully machined . . . one ounce to two tons.
- Development of special alloys to meet unusual requirements.
- Technical consulting service.

Amends Book Paper Order

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., May 31, 1944. — Paper Limitation Order L-245, applicable to book publishers, has been amended to permit a person who did no book publishing in the base year 1942, and hence has no paper quota for use in 1944, to use a maximum of five tons of paper per year for book publishing, the War Production Board said today. However, this amount must be furnished from the paper quota of the printer under Order L-241, officials of the Printing and Publishing Division said.

Under the terms of the amended book order, publishers who used less than five tons during 1942 may increase their paper usage up to that amount if the additional tonnage is taken from the commercial printer's quota under Order L-241.

"This will not result in a dissipation of paper," Harry F. West, chief of the WPB Book Section and administrator of Order L-245 stated, "since the control is applied, in whole or in part, against the commercial printer under L-241, the limitation order applicable to him."

Any person taking advantage of this provision in the amended L-245 must file with WPB's Printing and Publishing Division a statement within fifteen days after such paper is used, he said. In addition to the name and address of the publisher, the letter must furnish the name and address of the printer, the publisher's base period consumption (if any), and the tonnage deducted from the printer's quota under Order L-241. The letter must be signed by both the publisher and printer.

"It should be clearly understood," Mr. West explained, "that the five-ton provision is not applicable to book publishers whose consumption quotas under Order L-245 already equal or exceed five tons of paper. This provision is intended to provide relief only to those who either have no quota under Order L-245 or a quota of less than five tons. Furthermore, no one using five tons under this provision will be allowed to use any additional quota accruing under Order L-241 or other paper-use limitation orders for book publishing."

No Pulp Increase for Wall Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., May 28, 1944—Because the supply of pulp available for the production of wall paper has not increased, the Wall Paper Industry Advisory Committee recommended that no changes be made in War Production Board Limitation Order L-177, which limits specifications and paper consumption in that industry, Robert D. Ross, of the Commercial Printing Section of WPB's Printing and Publishing Division, said recently.

The advisory committee met in Washington recently to discuss possible changes in Order L-177, Mr. Ross, who was Government presiding officer, reported. After being informed of the gravity of the paper situation by David Graham, chief of the WPB Pulp Allocation Office, and William J. Ward, chief of the Groundwood Paper Section of the Paper Division, the committee recommended that there be:

No relaxation or liberalization of present restrictions on new wall paper designs under L-177. No liberalization of sample book restrictions. No reduction in the present 60 per cent paper consumption quota. No other changes in L-177.

We're in it for the duration

SINCE 1828

Continuously We Have Served The Paper Industry.

Since War II was declared we have used all our manufacturing facilities, and done our small part to help build our fighting machine for war.

At the same time we have been planning for peacetime equipment and improvements NOW!

We have some of our machines available to produce new machinery for civilian products.

Paper Machines
Paper Bag Machines **Paper Cutters**
Can be built with a PDIA Priority rating.

THE SMITH & WINCHESTER
MANUFACTURING COMPANY
PLANT AND OFFICES AT SOUTH WINDHAM, CONNECTICUT

DID YOU KNOW?

NATIONAL
supplies large quantities of
ADHESIVES & STARCH PRODUCTS

for sizing uniform fabrics, signal flags, etc.

for seating torpedo valves, packaging optical devices for observation and fire control, etc.

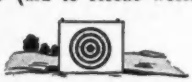
for sealing Secret Orders envelopes, splicing blueprints, binding manuals, etc.

for making flares, packaging Life Raft and Bail Out Rations, etc.

for forming and sealing Humidity Indicators used in protective packaging of motors, guns, etc.

for sizing Balloon Cloth & Trainer Plane wing fabrics

for forming and sealing Dye Envelopes (aid to rescue work)



for posting naval practice targets, mounting maps, etc.

for adhering luminous markers to ship decks and superstructures

&

for many other purposes important to naval training and operations and vital to Navy personnel.

Buy More War Bonds!

No. 4 of a series

THE UNITED STATES NAVY

. . . Champion of the right

. . . Guardian of our shores

. . . Nemesis of the foe

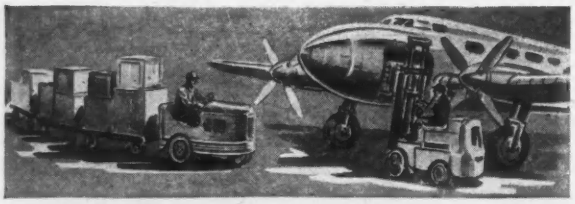
. . . Avenger of treachery

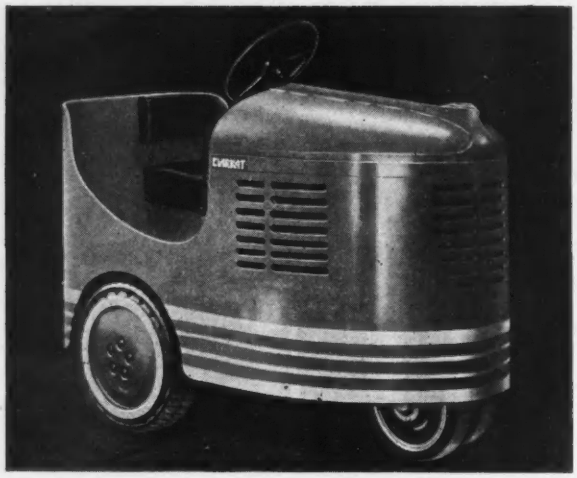
THE U. S. NAVY floats, flies, submerges and lands. You will find America's finest in action on, above and below the troubled surface of the globe . . . meting out justice in formidable doses . . . clipping the tentacles of unwarranted aggression . . . striking at the very vitals of enemy resistance . . . writing new, more glorious chapters in the annals of naval history.

With mighty arms in all seven seas and on all five continents, the problem of supplying food, clothing, ammunition, repair parts and equipment to the many divisions of the Navy is stupendous, yet efficiently administered by a compact procurement organization.

Our responsibility is to formulate and produce reliable adhesives and starch products for such requirements as those shown at the left. How well we do our job is a matter of record with the Navy Department and with war industries everywhere.

NATIONAL STARCH PRODUCTS
INCORPORATED
270 MADISON AVENUE, NEW YORK 16, N. Y.





CLARKAT

Clark's smallest industrial towing tractor — a turning radius of 57 inches, an overall width of 38¼ inches and capable of towing 40 tons on trailers.

The "Clarkat" is the answer where congestion of aisles demands a small tractor.

Built in both light and heavy duty models—standard automotive controls—twin wheels in the bow for stability, turret steel body for safety. Gas powered for continuous service.

Clark Tructractor builds industrial haulage vehicles for every material handling operation.

Another PRODUCT of CLARK EQUIPMENT COMPANY

Write for New Vest Pocket Catalog

CLARK TRUCTRACTOR

DIVISION OF CLARK EQUIPMENT COMPANY

BATTLE CREEK, MICHIGAN, U.S.A.

Obituary

Frank H. Knoll, Sr.

Frank H. Knoll, Sr., 59, president of F. H. Knoll & Son, Inc., mill representative of Newton Paper Company of Holyoke, Mass., and Case Brothers, Inc., of Manchester, Conn., died suddenly May 21, 1944, at his residence in East Rockaway, Long Island, N. Y.

Mr. Knoll was widely known in the paper industry. He started with C. B. Hewitt & Bros., was connected with Kelsey-Risdin & Co., and following this became a mill representative of Case Brothers, Inc. and Newton Paper Company. He had been in the paper industry for a period of 45 years.

He is survived by his wife, Mrs. Susan C. Knoll, two daughters, Mrs. Elida K. Colson and Mrs. Muriel C. Ghione, a son, Corp. Frank H. Knoll, Jr., U.S.A., and a granddaughter. Funeral services were held Thursday, May 25.

Charles H. Cashmore

Charles H. Cashmore, of Philadelphia, president of the Paterson Parchment Paper Company, Bristol, Pa., died Friday of last week in West Side Hospital, 446 West Forty-third Street. He was 67 years old.

Mr. Cashmore was born in New Britain, Conn., and was graduated from New York University in 1909. He had been connected with the Paterson Parchment Paper Company for twenty-five years. Surviving are his wife, Mrs. Rachel Carnighan Cashmore; two daughters, Mrs. Naomi Wulfsberg and Mrs. Louis C. Bonner; and a sister, Mrs. Gracie Sunburn.

Cuts Light-Weight Newsprint Orders

[FROM OUR REGULAR CORRESPONDENT]

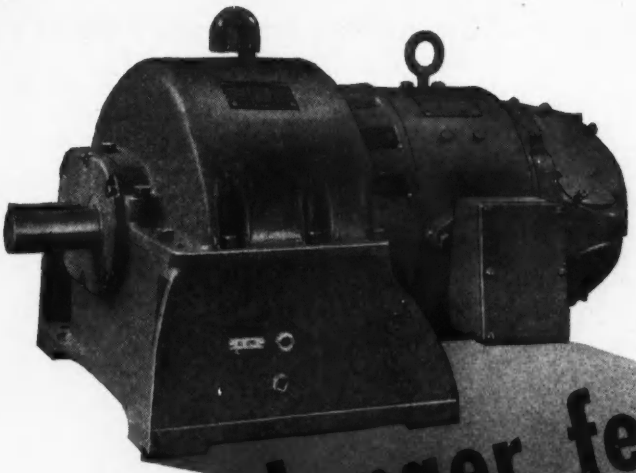
WASHINGTON, D. C., May 31, 1944—Orders of United States newspaper publishers for 30-pound Canadian newsprint must again be reduced in the second month of the experimental period, Arthur R. Treanor, director of the War Production Board's Printing and Publishing Division, advised United States newspaper publishers today. Orders for 32-pound (standard) newsprint will be completely filled under the agreement with the Newsprint Administrator of the Canadian Wartime Prices and Trade Board, as announced when arrangements for the experimental 60-day period were made between the two countries, he said.

The reduction in 30-pound newsprint orders on Canadian mills is necessary to effect a balance with Canadian newsprint production, Mr. Treanor explained, adding that it should be recalled that the Canadian authorities have stated that total production levels would have to be reduced as orders for 30-pound paper increased.

Paper Stock Prices Unchanged

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., May 29, 1944—Paper stock quotations remained the same last week as during the previous week. Government restrictions in regard to the use of bagging brought about the recent decline in some grades.



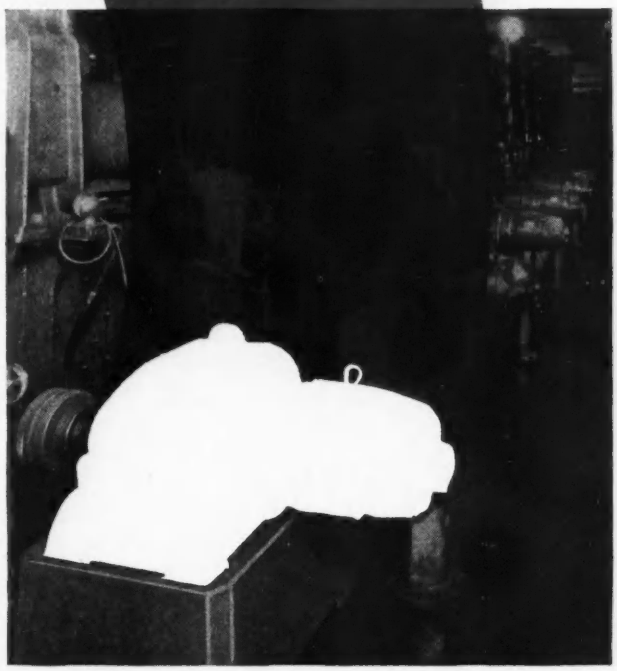
for longer felt life better quality more production

WESTINGHOUSE WET END DRIVES

If you expect felt to act as a belt for driving auxiliary rolls, you can expect higher felt costs and decreased production. A felt can only be made strong enough for efficient power transmission by sacrificing its water-removal and sheet-formation properties. The result is shorter felt life, poorer paper quality and more down time.

The remedy is simple—a Westinghouse principle proved in practice—the wet end auxiliary drive. It is equally applicable for sectional electric or mechanical drive machines. Where operating speeds are limited by the power-transmitting capacity of the felt, even one auxiliary power drive will permit increased operating speeds.

Westinghouse wet end auxiliary drives can reduce your felt costs by as much as $1.20 per ton of board—and increase your production and up paper quality at the same time. Complete information is contained in a new booklet, just published. Write today for your copy of B-3275. Westinghouse Electric & Manufacturing Company, Dept 7-N, East Pittsburgh, Pa J-94605



Westinghouse
PLANTS IN 25 CITIES . . . OFFICES EVERYWHERE

WET END AUXILIARY MOTOR DRIVES

FINANCIAL NEWS

New York Stock Exchange

High, Low and Last for Week Ending May 27, 1944

STOCKS

	High	Low	Last
A. P. W.	3	2½	3
Armstrong Cork Co.	41½	37⅜	41½
Celotex Corp.	11¾	11¼	11⅜
Celotex Corp., pf.	17¾	17¼	71¾
Certain-Teed Products Corp.	6¼	5¼	6⅛
Certain-Teed Products Corp., pf.	65¾	61	65¼
Champion Paper & Fibre Co.	25½	25½	25½
Champion Paper & Fibre Co., pf.	111	110¼	111
Congoleum Nairn Co.	24⅝	23¾	24⅝
Container Corp. of America	24¼	23⅝	23⅞
Continental-Diamond Fibre Co.	11¾	10	⅛01
Crown-Zellerbach Co.	17¼	17	17¼
Crown-Zellerbach Co., pf.	99⅞	99	99⅞
Dixie Cup Co.	16⅛	16	16⅛
Dixie Cup Co.—A	46½	45	45
Flintkote Co.	23	22⅛	22½
Flintkote Co., pf.	107	107	107
Robert Gair	3¾	3⅝	3¾
Robert Gair, pf.	14¼	14¼	14¼
International Paper Co.	16⅞	15¾	16⅞
International Paper Co., pf.	82	78⅜	82
Johns-Manville Corp.	95	91½	94⅝
Johns-Manville Corp., pf.	....	....	....
Kimberly-Clark Corp.	35½	35½	35½
MacAndrews & Forbes	26¼	26⅛	26¼
MacAndrews & Forbes, pf.	137¼	137¼	137¼
Masonite Corp.	50⅞	48¾	49¼
Mead Corp.	9¼	9	9¼
Mead Corp., pf. A-6%	91	90	90
Mead Corp., pf. B-5½	80	78⅝	80
National Container Corp.	15½	15⅜	15½
Paraffine Companies, Inc.	51½	50	51
Paraffine Companies, Inc. pf.	....	....	....
Rayonier, Inc.	14⅞	14¼	14¼
Rayonier, Inc., pf.	30¾	30	30
Ruberoid Co.	29⅝	29	29
Scott Paper Co.	41	40	40
Scott Paper Co., pf.	109¾	109¾	109¾
Sutherland Paper Co.	31¼	31¼	31¼
Union Bag & Paper Corp.	11⅛	10¾	11
United Paperboard Co.	5	5	5
U. S. Gypsum Co.	74	72	73½
U. S. Gypsum Co., pf.	175	175	175
West Virginia Pulp & Paper Co.	21¼	20⅛	21
West Virginia Pulp & Paper Co., pf.	107	106¾	107

BONDS

Abitibi Pulp & Paper Co. 5s '53	76¾	74	76¾
Celotex Corp. 3¾s '55	....	....	....
Certain-Teed Products Corp. 5½s '48	101	100¾	100¾
Champion Paper & Fibre Co. 4¾s '50	....	....	....
International Paper Co. 6s '55	108	107½	107½
International Paper Co. 5s '47	103¾	103⅝	103¾
Mead Corp. 3½ '53	....	....	....
West Virginia Pulp & Paper Co. 3s '54	....	....	....

New York Curb Exchange

High, Low and Last for Week Ending May 27, 1944

STOCKS

	High	Low	Last
Great Northern Paper Co.	33	32½	33
Hummel-Ross Fibre Corp.	5¼	5¼	5¼
St. Regis Paper Co.	4½	4⅜	4⅜
St. Regis Paper Co., pf.	162½	149½	162½
Taggart Corp.	5⅝	5⅝	5⅝

BONDS

American Writing Paper Co. 6s '61	100	100	100

Century Paper Co. Elects Officers

INDIANAPOLIS, Ind., May 23, 1944 — R. W. Fleischer, who has been president of the Century Paper Company, 207 South Meridian street, has been elected chairman of the board of directors. J. R. McCoy has been elected president and other members of the board are J. M. Schlenck, vice-president; Hal Shultz, sales manager; John Leech, secretary; Mrs. Helen H. Meuller, treasurer, and L. C. Wright, office manager.

Others in the company are George A. Brake, Leo Merritt, Robert K. Foust, William Buckley, Mrs. Rosemary Thompson, John Hartman, Wayne Sanders, Harold Surber and Robert Riddell.

The Century Paper Company was established here in 1922. Its reorganization at this time has been done to strengthen plans for postwar development. development.

Carey Names Production Head

The Philip Carey Manufacturing Company, Cincinnati, Ohio, has announced the appointment of C. B. Pooler as vice president in charge of manufacturing. The Carey Company operates nine plants in the United States and Canada.

Born in Fort Dodge, Iowa, Mr. Pooler has spent practically all of his life in the building material industry. An electrical and mechanical engineer, he has served as production manager, plant manager, division operations manager, manager of labor relations in plants producing fabricating steel, metal lath, insulating board, roofing, paints, paper, asbestos and gypsum products.

C. B. POOLER

Rules on Book Paper Price Ceilings

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., May 31, 1944.—Individual adjustments may be made in manufacturers' price ceilings on book paper and writing paper and certain other fine papers, provided two conditions are met, the Office of Price Administration announced today.

The two conditions that must exist before adjustments are granted are: (1) The manufacturer requesting an adjustment is unable to maintain his production of the paper at the existing price ceiling, and (2) either continuance of his production is required to meet a military or essential civilian need, or loss of his production will force his customers to resort to higher-priced sources of supply.

Any increases granted by these adjustments can be passed on by merchants or distributors who resell these papers. However, in any cases where the papers are sold at retail, prices will remain "frozen" at the highest March 1942 price of each seller.

OPA said that today's action, which is effective June 1, 1944, was taken because it appears that price ceilings in certain cases may threaten the continued production of these papers by some manufacturers. Heretofore the prices of certain grades only of book paper and writing paper were subject to adjustments of this nature, whereas the present action expands the adjustment technique to cover all book, writing and certain other fine papers priced under Maximum Price Regulation 450 and 451.

RUBBER COVERED ROLLS

STOWE-WOODWARD, INC.

NEWTON UPPER FALLS 64, MASS.

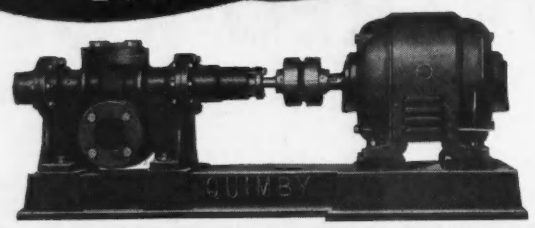
New York Office—Woolworth Building

SCREW · ROTEX · CENTRIFUGAL · CHEMICAL

QUIMBY PUMPS

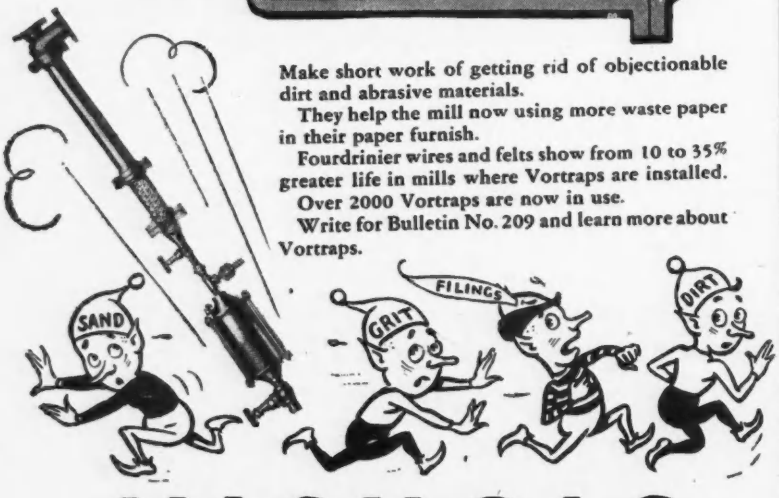
Quimby Pumps have a way of keeping everlastingly at it, without any sign of wear or letdown in efficiency, far beyond the usual life-expectancy of a pump.

KEEP EVERLASTINGLY AT IT



QUIMBY PUMP COMPANY
INCORPORATED
Division of H. K. Porter Company, Inc.
PITTSBURGH, PENNSYLVANIA
FACTORIES:
Pittsburgh, Pa. • Blairsville, Pa. • Newark, N. J. • New Brunswick, N. J.

VORTRAPS



Make short work of getting rid of objectionable dirt and abrasive materials.

They help the mill now using more waste paper in their paper furnish.

Fourdrinier wires and felts show from 10 to 35% greater life in mills where Vortraps are installed.

Over 2000 Vortraps are now in use.

Write for Bulletin No. 209 and learn more about Vortraps.

NICHOLS
ENGINEERING & NERCO RESEARCH CORP.
60 WALL TOWER BUILDING
NEW YORK 5, N. Y.
UNIVERSITY TOWER BLDG
MONTREAL, P. Q.

For More Waste Paper

WASHINGTON, D. C., May 31, 1944 —When in danger of closing down because of lack of waste paper required for essential manufacturing or conversion operations, paper and paperboard mills may apply to the Office of Pulp Allocation, War Production Board, for a special directive allocating waste paper to them, Harold Boeschenstein, acting director of the War Production Board's Forest Products Bureau, stated today.

In qualifying, a consumer is required to file in duplicate his application stating the following information: (1) List of orders in the mill including priority ratings thereon, that will be delayed if waste paper is not received; (2) What efforts have been made by the mill to get waste paper at the ceiling price through established channels and other available sources, including those which may involve extra shipping cost; (3) The applicant's present inventory of the grades of waste paper for which he is requesting relief, expressed both in tons and days' consumption at the current rate of operation; (4) That the quantity requested represents minimum needs to meet his authorized production schedules.

The new Order M-377 effecting this practice covers three types of waste paper only: "No. 1 mixed paper," "No. 1 news," "old corrugated containers" in accordance with the definitions contained in OPA Order MPR-30.

WPB believes that this order will afford a means of relief to emergency situations.

Supplying Machinery

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., May 31, 1944 —To simplify the problems of manufacturers supplying machinery to the pulp and paper and paper board industries, General Conservation Order M-126, prohibiting use of steel in the production of more than 500 listed items, has been amended to remove such machinery from its controls, the War Production Board announced today. The change obviates the necessity of appealing under the conservation order and fits in with the general program set up for the manufacture of new machinery and equipment for these industries.

Supplies of paper and paper board products are critically short, WPB said, and efforts to increase production include quarterly allotments of material to machinery manufacturers, when authorized by the Pulp and Paper Division.

PAPER

17 million tons* of it!

GENERAL CHEMICAL COMPANY ***products for the Paper Industry.***

Aluminum Sulfate (*Standard and Iron Free*) • **Sodium Silicate**
Zinc Chloride Solution • **Glauber's Salt** (*Crystal or Anhydrous*)
Sodium Sulfide • **Sodium Bisulfite** (*Solution or Anhydrous*)
Crystal Alum, Potassium • **Salt Cake** • **Trisodium Phosphate**
Sodium Metasilicate • **Sodium Hyposulfite** • **Muriatic Acid**
Sodium Sulfite Anhydrous • **Sodium Aluminum Sulfate**
Epsom Salt • **Nitre Cake** • **Sulfuric Acid**

GENERAL CHEMICAL COMPANY

40 RECTOR STREET, NEW YORK 6, N. Y.

Technical Service Offices: Atlanta • Baltimore • Boston • Bridgeport (Conn.) • Buffalo Charlotte (N. C.) • Chicago • Cleveland • Denver • Detroit • Houston • Kansas City • Milwaukee Minneapolis • New York • Philadelphia • Pittsburgh • Providence (R. I.) • St. Louis • Utica (N. Y.)

Pacific Coast Technical Service Offices:
Los Angeles • San Francisco • Seattle, Wenatchee and Yakima (Wash.)

In Canada: The Nichols Chemical Company, Limited • Montreal • Toronto • Vancouver

*Estimated American Paper Production for 1943

PAPER
TRADE JOURNAL
Title Reg. U. S. Pat. Off.
Henry J. Berger, Editor

COMING EVENTS IN PAPER INDUSTRY

NEW ENGLAND SECTION. Technical Association of the Pulp and Paper Industry—Third Friday of each month at the Roger Smith Hotel, Holyoke, Mass.

DELAWARE VALLEY SECTION. Technical Association of the Pulp and Paper Industry—First Friday of each month at the Engineers Club, Philadelphia, Pa.

LAKE STATES SECTION. Technical Association of the Pulp and Paper Industry—Second Tuesday of each month at the Conway Hotel, Appleton, Wis.

KALAMAZOO VALLEY SECTION. Technical Association of the Pulp and Paper Industry—First Thursday of each month at the Park, American Hotel, Kalamazoo, Mich.

CHICAGO PROFESSIONAL PAPER GROUP—First Monday of each month except July and August at Chicago, Ill.

PAPER SUPPLY AND DEMAND

Inconveniences and hardships in varying degrees are inevitable in a wartime economy. The great national objective is the winning of the war in as short a period of conflict as practicable. War is successfully waged by the united efforts of the fighting front supported by the home front. The balancing of supplies of all kinds essential to the maintenance of both these fronts is a huge and complex problem. It is this problem that the WPB, the OPA and many other wartime governmental agencies are constantly striving to solve to further the progress of the war.

In discussing the basic problem of supply and demand, Arthur R. Treanor, director of the Printing and Publishing Division of the War Production Board, on leave from the Booth Newspapers, Inc., of Michigan, presented to the Senate last week a comprehensive summary of the subject. Mr. Treanor said in part that, "The Forest Products Bureau, of which the Printing and Publishing Division is a part, is responsible for the over-all problems of production and consumption of lumber, pulp, paper and paper board. The supply of these commodities has been greatly reduced, largely because of labor and transportation shortages and because imports from European countries have been cut off. Demand, on the other hand, has increased tremendously because of military needs — V-boxes and other containers, explosives, camouflage materials, high-tenacity rayon, maps, blueprints, etc. The Requirement Committee of the War Production Board screens the demands of the various claimant agencies for forest products, as it does with steel, copper, aluminum and other raw materials. A share of the wood pulp supply is earmarked for newsprint and for magazine and book paper. After the pulp has been manufactured into paper, the Printing and Publishing Division administers the distribution of this limited supply."

In commenting on the methods of distribution Mr. Treanor pointed out that, "There are two ways in which this could be done: (1) the 'allocation' system and (2) the 'quota' system. These methods are quite different and the difference should be clearly understood if the work of this Division is to be appraised. Print paper, however, is rationed on a 'quota' not an 'allocation' system. The distinction is important. When a person wants to obtain some material under allocation he fills out a form stating how much is desired and its proposed use. All the requests for this material are tabulated and the available supply is apportioned according to relative essentiality. Such a system has been found in the best interest of the war effort where there is a rapidly changing situation with respect to either supply or demand. An entirely different system is used with respect to print paper for many reasons. No distinctions are ever made on the basis of editorial policy. Censorship is entirely foreign to our functions. The particular words which a publisher intends to print are of no consequence to the War Production Board and have no effect upon the amount of paper he may use. Thus every publisher is permitted to consume, automatically and without application to or authorization by the War Production Board, a stipulated percentage of the paper which is used during a base period, as made public in the limitation orders. Quotas are available to publishers as a matter of right; no administrative discretion whatsoever is involved."

In explaining how distribution of paper was accomplished last year, Mr. Treanor said in part: "During 1943, 4,513,675 tons of paper were used in the publication of newspapers, magazines and books. A total of 217,248 tons was granted on appeal. Thus, 95.19% of all paper consumed by these industries last year came from the publishers' quotas established by the respective limitation orders. No War Production Board official could or did change these quotas. Appeal tonnage has been reduced greatly for 1944. It is estimated that 98% of all paper which will be consumed in the publication of newspapers, magazines and books during 1944 will be taken from quotas established by the general limitation orders. The tonnage remaining is made available to publishers through the appeal procedure. In any consideration of the procedures which govern the appeal process, or the amount of discretion entrusted to individuals, or the factors governing the exercise of that discretion, it should be borne in mind that only a very small percentage of the paper consumed in these industries is not entirely controlled by the limitation orders."

The development of standards governing appeals, safeguards against incompetent and dishonest administration and the applications of the standards were explained in some detail by Mr. Treanor. He also explained the proposed new standards for the distribution of newsprint paper to newspaper publishers and book paper to publishers of magazines and books. In reference to the indispensability of an appeals clause, he said in part: "It was recognized at the outset that no order applicable to an entire industry could bring about an absolute equality of sacrifice. . . . It was certain that unanticipated circumstances would create various conditions of hardship after the issuance of the orders. Consequently, there was in-

serted in each of the paper limitation orders, as in all other War Production Board orders, a clause permitting appeals for relief from the restrictions. This accorded with the general policy of the War Production Board as stated in Priorities Regulation No. 1."

Relative to the basic soundness of the orders, Mr. Treanor said in part: "During these abnormal, unstable and difficult times, when all types of paper and other pulp products are in critically short supply, and the demand from both military and civilian consumers is unprecedentedly heavy, no one is able to obtain as much paper as desired. Thus the wants of thousands go partially unfilled and it is no surprise if some are dissatisfied not only with the ration but also with the rationer. In the distribution of a scarcity, one cannot expect to please all."

Waterproof Papers Inc. To Start

WORCESTER, Mass., May 29, 1944.—The manufacture of a laminated, asphalt-center paper will be begun in about 60 days in space taken at the old Central Works of the American Steel & Wire Company by Waterproof Papers, Inc., a newly formed Worcester corporation.

The plant is expected to employ about 20 at the start of its operations, and its products will be used to protect shipments of goods going overseas and in similar wartime uses.

Officers of the corporation are Bayard S. Stone, president; William F. Snyder, vice-president; Donald L. Gibbs, treasurer, and Chesley H. Bell, secretary. The plant is located on Kansas street, has a railroad siding and will be completely renovated prior to the installation of machinery in July.

Production Ratio Report*

(Production as per cent of six-day capacity)

COMPARATIVE WEEKLY SUMMARIES

Current Weeks—1944		Corresponding Weeks—1943	
April 15	86.7	April 17	89.3
April 22	91.3	April 24	89.7
April 29	90.9	May 1	85.8
May 6	91.5	May 8	90.6
May 13	89.6	May 15	91.1
May 20	*91.6*	May 22	92.2

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July
1943	87.2	88.9	89.5	88.7	91.4	84.8	84.3
1944	89.6	89.6	90.1	*89.5*			

Year	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1944	91.0	88.3	89.6	89.6	82.0	87.8

COMPARATIVE YEARLY SUMMARIES

	1937	1938	1939	1940	1941	1942	1943	1944
Year to Date	89.6	67.6	80.2	86.0	92.1	101.8	88.0	*90.2*
Year Average	79.8	71.5	83.4	85.6	97.4	90.4	87.8	

* Based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

PAPERBOARD OPERATING RATIOS†

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1938	56	63	63	60	60	59	59	69	70	73	67	61	64
1939	65	73	76	74	69	73	68	77	82	91	88	77	77
1940	78	75	74	76	82	85	77	79	78	85	83	77	78
1941	81	88	89	89	91	94	92	98	95	99	98	90	92
1942	102	101	101	95	82	72	68	75	76	81	82	77	84
1943	86	88	94	94	96	94	89	96	94	94	93	87	93
1944	90	96	95	*96*									

Week ending Apr. 15, 1944—92
Week ending Apr. 22, 1944—98
Week ending Apr. 29, 1944—98
Week ending May 6, 1944—98
Week ending May 13, 1944—95
Week ending May 20, 1944—97

† Per cents of operation based on "Inch-Hours" reported to the National Paperboard Assn.

PARSONS AND WHITTEMORE INCORPORATED
10 EAST 40TH ST.
NEW YORK CITY
•
WORLD-WIDE PAPER EXPORTERS

LYDDON & COMPANY (AMERICA) INC.
51 EAST 42ND ST.
NEW YORK CITY
•
EXPORTERS OF AMERICAN PULP TO BRITAIN, SOUTH AMERICA AND ALL OTHER WORLD MARKETS

As producers of a complete range of rosin sizes...from gum or wood rosin in pale grades for light colored papers to more economical grades where color is not a factor...is a service which Cyanamid extends to the paper industry from strategically convenient manufacturing and warehouse points.

This service on rosin size, delivering a product of uniform high quality, is supplemented by Cyanamid's technical service and research facilities. Here at Cyanamid the rosin size produced is continually checked throughout manufacture to make certain that all shipments meet the company's rigid high standards. Cyanamid Pale Wood Rosin Size for example, comparable in color to high grade gum size, has been produced bringing to the paper manufacturer a product of exceptional cleanliness. Likewise, experienced Cyanamid servicemen are ready to help you effect improvements not only in the use of rosin size but other chemicals and specialties especially developed and produced by Cyanamid for the paper industry.

Also, under today's conditions of labor shortages, Cyanamid's prepared rosin sizes offer the time and labor saving advantages of being ready for immediate use. Your inquiry is invited on any matters of supply or technical service on which we may be of help.

American Cyanamid & Chemical Corporation

(A Unit of American Cyanamid Company)

30 ROCKEFELLER PLAZA · NEW YORK 20, N. Y.

DISTRICT OFFICES: Boston, Mass.; Philadelphia, Pa.; Baltimore, Maryland; Charlotte, N. C.; Cleveland, Ohio; Chicago, Ill.; Kalamazoo, Michigan; Detroit, Michigan; St. Louis, Missouri; Azusa, California; Seattle, Washington.
In Canada: Dillons Chemical Company, Ltd., Montreal and Toronto

Waxes • Wax Sizes • Rosin Size, Synthetic Resins • Casein • Alum Sulphonated Oils • Fillers Defoamers • Soda Ash • Caustic Soda • Salt Cake • Acids • Clays Satin White • Aerosol* Wetting Agents • Calmicro (Calcium Carbonate) & other Paper Chemicals

*Reg. U. S. Pat. Off.

Section of the
TECHNICAL ASSOCIATION
OF THE PULP & PAPER INDUSTRY
122 E. 42nd St., New York 17, N. Y.
Edited by R. G. Macdonald, Secretary

The Roberts Grinder—A Radical Departure from Standard Wood Grinding Principles*

By R. M. Radsch[1]

Abstract

The construction, operation, power requirements, and advantages of the Roberts grinder are given. It is claimed that this equipment is the most efficient and most easy to maintain of the varied types of grinders in use at the present time.

The middle of the 19th century marks the beginning of a great epoch in the progress of minkind. The use of wood as a source of paper making material was made available by the application of chemical solvents in the production of soda and sulphite pulps and Keller developed a practical method of producing mechanical pulp by grinding the wood. The centuries old scarcity of papermaking materials was ended. An inexhaustible, perpetuating, and cheap supply of fiber for papermaking was made available to all the world. At Kurtisville, Massachusetts, the first American groundwood mill started operation in 1876. As in other standard pulp and paper making equipment the principles of construction and operation of the pulp grinder have seen little change since its invention, although many improvements have been made in size, capacity, and mechanical features. Pocket grinders have been most universally used in the production of groundwood pulp. Magazine and continuous chain grinders were later innovations.

In 1936 F. W. Roberts of the F. W. Roberts Manufacturing Company, Lockport, New York, who had spent most of his life in the groundwood field, built a model grinder embodying the principle he dreamed about for many years. It proved astonishingly successful and in 1939 the first full size mill unit was put into operation in the mill of the Algonquin Paper Company at Ogdensburg, New York. It fully corroborated the results obtained with the experimental unit and after minor adjustments and alterations a uniformly high grade of pulp was produced at expected capacities. As a result four more units were installed in 1941 replacing twenty pocket grinders.

In his paper on the Roberts grinder before the Technical Association in February, 1941, A. E. Bartlett, Chief Engineer and Production Manager of the Algonquin Paper Company, concluded with the following remark: "The saving that is apparent in our mill where we make about 100 ton of groundwood per day is roughly about $50,000 a year. This is estimated from our tests to be the result of savings in: power, labor, saw dust, repairs, auxiliary equipment, and auxiliary power."

The first experimental 4-foot mill size unit was installed in 1940 in the mill of the Ontario Paper Company, Thorold, Ontario. It was operated as a 2-foot grinder for about a year and subjected to every possible test. Ten additional Roberts grinders were ordered as a result and together with the original unit were installed in line replacing 31 pocket grinders.

Grinder Operation

This grinder differs radically from all other types in principle and operation. Hydraulic pressure operated pockets are eliminated and it is designed for continuous grinding of wood. The grinder is rectangular in appearance, 13 feet ½ inch long, 12 feet 8½ inch wide to motor coupling and 11 feet 8½ inch high. A large cast iron ring 10 foot in diameter is mounted inside of the heavy cast iron housing and slowly revolves in an eccentric circle around a pulp stone so that the ring almost contacts the stone at a point about 30° beyond the perpendicular bottom center line of the ring. The stone surface and inner ring surface thus form a wedge or horn shaped space which holds the wood to be ground. The pulpwood within this space is drawn into the diminishing wedge chamber by the slowly rotating drum and thus forced against the stone at a predetermined pressure as it is being ground into pulp. A variable speed fluid drive unit coupled to a helical gear reducer and a large worm gear unit mounted on the feed ring drives it and furnishes the required grinding pressure. This driving unit is mounted on the top of the cast iron casing which encloses the ring and stone. An automatic load control valve on the oil line regulates the power delivered by the fluid motor maintaining an even load on the motor driving the pulp stone. This produces a driving mechanism with a constant torque and variable speed. The heavily constructed trueing lathe operated by an oil motor is mounted above the stone and consists of a cast iron cross head and slide mounted on two 5½ inch diameter brass covered rods. A fluid motor coupled to a stainless steel screw provides the power for moving the cross head across the face of the stone. A four-way valve regulates the direction of travel, being adjustable for any desired speed. The lathe head carries through the back casing to make burr changing accessible. The lower part of the casing is designed to act as a stock pit. Pulp, when ground,

* Presented at the meeting of the American Pulp and Paper Mill Superintendents Association, Edgewater Beach Hotel, Chicago, Ill., May 24-26, 1944.

[1] Sales Manager, Appleton Machine Co., Appleton, Wis.

is forced through large holes in the inner walls of the housing, forming with the outer frame wall the stock chamber. A controlling weir is mounted in the chamber for stock level regulation.

Present Robert Grinder installations are using 54 by 54 inch stones, but larger diameters will be used as required in future installations. Artificial stones are used. Grinder shafts are 14 inch diameter at stone and flange mountings and bearing are lined with Ryertex and water lubricated. A shim catcher retains the small amount of shims passing between the stone and large feed ring. They are mainly ground up into pulp. The feed ring consists of two complete cast iron rings machined on the outside for the worm gear mounting. This ring is carried on a series of Ryertex blocks. These blocks act as both radial and thrust bearings for the ring. As the stone wears down slowly adjustment in the wood pocket is provided by moving the grinder case by means of a jack screw fastened to a cross member on the bottom castings and having a bearing on the base plate. Oil temperature control heat exchanger, temperature, and load control units, etc., make up the complete self-contained grinder requiring no additional auxiliary equipment. The weight without stone is approximately 90,000 pounds. The floor space required for a grinder installation is but little greater than that used by a 3 pocket unit and the head room requirements are also about the same. As a result few mill changes have to be made in substituting Roberts grinders for the pocket type. Ordinarily three or four pocket grinders can be replaced by one Roberts, producing a comparable quantity of pulp.

Groundwood Production

The Roberts type of grinder has proven the practicability of high speed grinding. At a normal stone speed of 240 r.p.m. up to 2000 h.p. per unit can be used. Increasing the speed to 350 r.p.m. with its resultant greater surface speed permits the use of motor units up to 3000 h.p. As the higher speeds and greater power input corresponding increases in pulp capacity are obtained. Grinding pulp sucessfully at 5000 feet per minute surface speeds has been fully demonstrated. This is also about the present speed limit, as it is the maximum at which artificial stones are guaranteed by the manufacturer. The capacity of Roberts grinders depends upon stone speed and power input. An early installation driven by 1200 h.p. motor at 240 r.p.m. using a 54 by 54 inch stone produced 25 ton of good grade newsprint pulp in 24 hours at 50 h.p. per ton. Another installation using 3000 h.p. motor per unit 54 by 54 inch fairly fine grit size stones at 350 r.p.m. is producing 38 tons air dry pulp in 24 hours at 68 h.p. per ton, with a freeness of 103 ml. Canadian Standard. Due to power restrictions and other war time limitations, it has not been possible to operate these grinders to their best advantage. Under proper conditions we are convinced the Roberts grinder using the right amount of power at 5000 feet per minute stone surface speed will readily produce 45 to 50 tons of good news grade pulp in 24 hours.

Labor savings resulting from installations are very pronounced. With a correctly installed wood conveying system one man can readily feed two grinders producing up to 100 tons in 24 hours. Reductions in grinder room crews of 50% and more can easily be made. Greatly improved operating conditions exist in a grinder room equipped with Roberts grinders. The centralized compact unit requiring no auxiliary equipment makes for neat installations. Easily installed exhaust systems eliminate the escape of all steam and vapors into the room. The absence of any escaping pulp adds greatly in maintaining cleanliness. Wood conveying systems making the handling of wood and feeding it to the grinders entirely mechanical are a great help in maintaining good housekeeping. All this means that the grinder room can now be made one of the show places of the mill. This grinder will readily produce the various grades of groundwood pulp required for any type of groundwood papers. The feed ring speed can be varied to create varying pressures resulting in different rates of grinding and various grades of pulp. As slight changes of grinding area develop in the wood pocket due to varying wood sizes or quantities the ring automatically increases or decreases in speed to maintain a uniform load on the motor or turbine to which the grinder is connected. Accurate load control is possible with this type of grinder. A small reversing motor operates a valve in the supply line to an oil motor driving the feed worm. The motor is connected with the main power line of the grinder motor and maintains a very uniform power curve on the grinder.

Advantages

Summarizing the advantages of Roberts grinders over all other types in use today and basing them upon mechanical design and operating principle together with actual results obtained in mill installations the following claims are clearly in evidence:

1. Units are more compact and require less floor space than any other type. They are entirely centralized using no auxiliary equipment. For comparable pulp production, floor space saving up to 50% can be made.

2. Upkeep costs are much lower, owing to few moving parts, simplicity and ruggedness of design and elimination of auxiliary equipment.

3. Continuous operation and feeding of the grinder results in no drop or peaking of loads in charging of pockets. It is probably the only grinder in which a spot freeness test over the dam is indicative of actual operation.

4. Easy conveyor feeding of wood permits one grinder man per shift to take care of 75 to 100 tons pulp production in 24 hours.

5. The use of high speed grinding increases pulp output per unit requiring fewer installations and less labor to produce the required tonnage.

6. Slivers in pulp are reduced 50% due to the installation of a shim catcher and their subsequent regrinding. No accumulation of shims gather in the side canals which obviates interruption of flow and shim pulling prevalent in other types.

7. All moving parts of the grinder are readily accessible for changing and inspection.

8. Easily installed vapor exhaust systems prove very efficient keeping the room clear of steam at all times. This, together with the entire absence of ground stock leakage around the grinder produces a neat appearing grinder room.

9. Stone shaft breakage is eliminated as grinding pressures on shaft are greatly reduced because of the operating principle of the grinder.

10. The Roberts grinder produces pulp with lower power input per ton of pulp, greater labor saving, better grades of stock at any given freeness, less waste of bull screen shives and final screenings, closer uniformity in quality and consistency of stock, and less maintenance and operating attention than any other type of grinder in use at the present time.

Operation and Performance of a Controlled Vat System*

By O. C. Cordes[1]

Abstract

The mixture and flow of paperboard stock from the chests to the various vats is the subject of this discussion. Stock and white water are thoroughly and uniformly blended in such a manner as to remove air and so distributed in the vat to produce even formation. The various types of equipment such as valves, headers, mixing boxes; and the vat with its accessories are taken in sequence.

In the production of a good sheet of board, the raw material, the preparation of this material, the introduction of the stock to the vats, the formation, and the proper sequence of pressing are of prime importance. Each one of these directly affects the quality and uniformity of the product.

The paper mills are now successfully controlling the preparation of the furnish to the cylinder board machine, resulting in a substantial improvement of product and reduction in costs for the same type or even lower grades of raw materials.

The next step in order is a controlled sequence of mixture and flow from the machine stock chests into and through the vats. The writer will here endeavor to describe such a system together with the effects to be obtained thereby. The system from the stock chest to the vat will be substantially the same for either counterflow or uniflow vats. However, since time does not permit and the subject is quite broad, we will limit this discussion to the counterflow type, which is the most versatile as it readily and easily handles a wide range of weights and classes of furnish; and at the present time is producing the major portion of all classes of board made.

Stock Flow to Vat

Let us now consider such a controlled system and follow the stock flow from the chest and through the vat. In Fig. 1 a simplified cut away drawing of such a system is shown. There are three kinds of stock involved i.e. top liner, back liner, and filler. These stocks are pumped continuously from their respective chests to a head box through pipes of such size and design as to give a minimum loss in friction head; and this head box functions only to establish the desired constant head against which the stock is pumped, the overflow returning directly to the several chests. At each vat a special three gate valve is inserted in the three stock pipe lines, and by opening the proper one of these gates, the desired stock is introduced into the white water going to the vat screen, and is thoroughly dispersed through it by the action of the differential in static head, since the stock head is constant and appreciably higher than that of the white water.

* Presented at the meeting of the American Pulp and Paper Mill Superintendents Association, Edgewater Beach Hotel, Chicago, Ill., May 24-26, 1944.

[1] Sales Engineer, Downingtown Manufacturing Co., Downingtown, Pa.

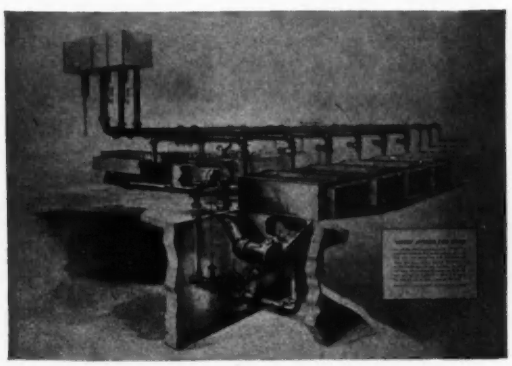


FIG. 1
Schematic Drawing of a Controlled Vat System.

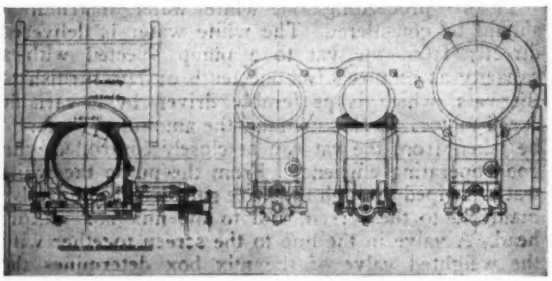


FIG. 2
Construction of a Three Gate Valve

Here by proper design of the valve gates, to conform with the differential in head, the rate of stock flow to the screen is definitely controlled for a given consistency. Figure 2 shows the construction and arrangement of the three gate valve. The three valves, by means of their rotary gates, empty into a common manifold through which the white water to the screen flows. The rotary gate has a width of 1 inch and the head differential is set so that when discharging stock the gate is always open a reasonable distance to insure a steady flow with no tendency to clog. A scale is attached to the valve operating stem which indicates the amount of valve opening, and from running observations a chart can be made which shows the valve setting the last time the board was run for each grade and calibre of board. The valve is provided with a device which, when the valve stem latch is lifted, permits the gate to be opened and closed quickly to clear away obstructions or hang ups.

Returning to the Fig. 1, the stock and white water mixture to the screen is followed. The mixture from the three valve manifold is brought into one end of the screen from underneath, through a special adapter and baffle arrangement, whereby the mixture flows evenly over the screen plates without the usual cascading, splashing and jumping over one or more plates. The flow of the mixture is so controlled that little or no air is entrained and efficient use of all of the screen plates is made.

The screened stock, which contains few if any air bubbles, now flows to the outer circle of the mixing

head under the stainless steel mix box, and as it wells up into the cylindrical mix box proper, is thoroughly mixed with the high velocity white water radial squirt being released by the weighted valve (Fig. 3). Here again the mixture is controlled to provide a thorough mixing by the violent agitation set up from the velocity head of the white water, to eliminate any entrained air as the mixture moves away from the center toward the overflow dam and to eliminate any air induced foam.

Before proceeding the white water distribution should be considered. The white water is delivered directly from the vat to a pump selected with a capacity as required for one tenth of 1% furnish to the vats, which is preferably driven by a variable speed motor. In this manner, the amount of water to be taken from the vat can be closely controlled with good operating efficiency. From the pump the white water is piped through the three gate distributing valve manifold to the screen, and to the mix box mixing head. A valve in the line to the screen together with the weighted valve of the mix box determines the amount of water going to the screen and the remainder of the water is delivered by the weighted valve to the mix box.

In order to control the flow of the furnish from the mix box to the stainless steel vat the stock pipe is designed to produce the proper velocity of flow for the tonnage output and product of the vat, and the mix box hydraulic head is set so as to provide the required flow without more than 3 or 4 inches of head. This controls the velocity to the proper rate to prevent bunching of the fibers and prevents entrainment of air as it goes over into the vat.

Distribution of Furnish in Vat

At the vat entrance, the furnish is received at right angles into a stock inlet which gradually and uniformly spreads it out up into the vat. With proper design and proportioning the spread of the furnish can be controlled at this point which is very important. The furnish now rises to the making board of the vat and passes over it into the vat circle. On the way up it encounters two adjustable baffles, specially shaped for slip flow, so that the velocity can be varied and the turbulence controlled and reduced to the desired operating flow for good formation. The upper baffle has the greatest effect on the turbulence and is more often adjusted.

Figures 4 and 5 show a stainless steel vat of the latest design. Note that the vat body is made of stainless steel and carries no external weight. The cylinder

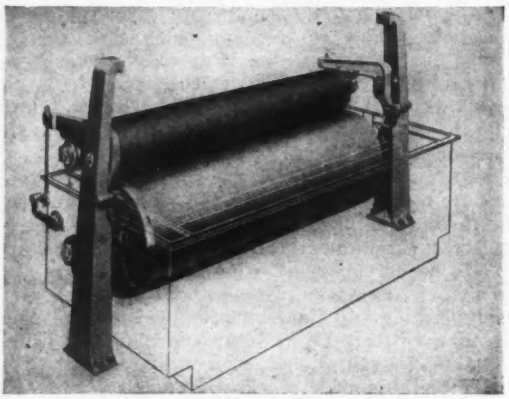


FIG. 4
Arrangement of Mold and Couch

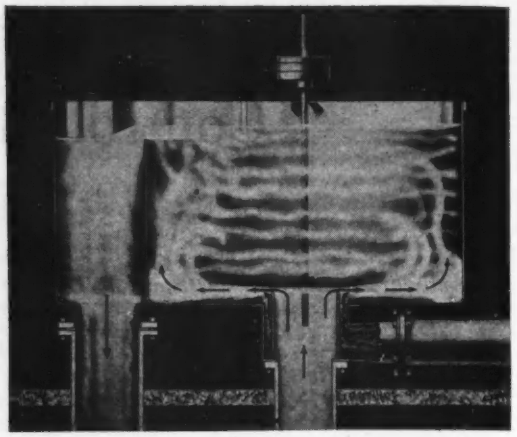


FIG. 3
Stock Flow Through Mix Box

mold and the couch are all supported on cast iron stands which are fastened to the sole plates. The controls for adjusting the baffles are shown on the side of the vat. The making board of this vat is adjustable up or down so that the head and flow into the circle can be adjusted a small amount.

The furnish passes over the making board and into the space between the cylinder mold and the circle, and on its way encounters the Puette rectifier which is located near the bottom of the front part of the circle. The control for this can be seen at the bottom of the water box. This rectifier may be likened to a valve in that it can be moved toward or away from the cylinder mold for its full length of face, thereby opening or closing this space. The operation of the rectifier changes the initial head and the rate of flow to the back of the circle and this together with the drainage rate determines the speed and quality of formation. The rectifier by increasing the velocity at its point of location causes lumps and fines to be washed from the surface of the formation and levels out the sheet. It is important that the width of the back part of the circle opening be large enough to prevent undue agitation or eddy flows at this point causing streaking and uneven formation, for here the main portion of the sheet is formed.

The drainage rates have been determined for various furnishes by actual tests and knowing the types of furnish to be handled and the production, the diameter

FIG. 5
Illustration of Stainless Steel Vat

of the cylinder mold can be arrived at with reasonable accuracy. This is important as a mold can be too large as well as too small with a resulting poor formation.

The absence of cascading and splashing with the controlled vat system results in a very much cleaner mill, particularly around the screens back of the machine. Also, the fact that the stock control valves are directly back of the machine reachable from the floor level, makes it much easier and quicker for the operators to effect changes in weight, etc. than with the old system of head boxes and gates. This has resulted in an appreciable increase in actual machine production, largely because of the ease in changing orders.

Conclusion

In closing, to emphasize the three points made.

(a) Equipment can be designed to eliminate all entrained foam causing air.
(b) Stock distribution can be made simple and easy to handle from the machine room floor.
(c) Furnish can be introduced properly into the vat to produce a level sheet.

Uniformity Factors in Coating Clays*

By C. G. Albert[1]

Abstract

Because clay is the preponderant mineral material used in coating colors, its uniformity is of utmost importance. Clay is a natural product so that its properties must be regulated in the refining process and at the same time sufficient blending should be accomplished to produce the greatest uniformity possible as it is sometimes impossible for the mills to make the necessary adjustments.

However uniform a clay might be, this uniformity alone could not guarantee uniform behavior of coating colors nor uniform quality of a finished coated sheet. Nevertheless, the fact that clay is the predominant ingredient, on a dry basis, of most coating colors makes uniformity of the clay essential for best results.

The ideal clay should be uniform with respect to pH, viscosity, and general hydrous characteristics in order to permit uniformity from the standpoint of application of the coating. At the same time the ideal clay, from the standpoint of quality of the finished sheet, should be free from any variation in color, in its ability to impart finish to the sheet, in adhesive requirements, and in behavior toward printing inks.

Such an exacting set of requirements would not even be easily met with an artificial pigment, every step of whose manufacture could be subjected to physical and chemical control. Clay is a naturally occurring material, and it appears that nature failed to provide us with any ideal clays by the above definition. Since clays, as they occur in deposits, do not meet these requirements it is one of the aims of the refining processes employed to provide a closer approach to the ideal coating clay.

The simplest refining process used in clay production is air-floating—the crude clay is simply dried, pulverized, and air classified. Some of the impurities which are highest in specific gravity and most resistant to the action of the pulverizer will be eliminated. With this exception the clay remains much as it was in the deposit—and the nonuniformities persist.

Waterwashing of clays makes possible a more efficient removal of impurities and a somewhat greater uniformity since the flow of the clay slip in and out of tanks and through the troughs used results in a certain degree of blending.

Neither of these processes has been found sufficient to produce clays of quality and uniformity adequate for modern coating requirements. Instead, it has been found necessary to control the particle size of coating clays by fractionation while in a deflocculated condition, to control pH by subsequent chemical treatment, and to improve and control color by chemical bleaching treatments. Each of these unit operations is, from the standpoint of uniformity, a two-edged sword. If the processing is done without adequate controls the uniformity of the product may be less than that of the starting material. On the other hand each step of the processing offers an opportunity to control one or more properties of the product. It is largely by successfully making use of these opportunities that clay producers have been able to meet the increasingly exacting uniformity requirements of the coated paper industry.

At various points during the processing of clays of this type there is, in addition, a chance to still further iron out irregularities in the crude clay by wet blending. The progress of the clay slip through the operation involves numerous passages through pipes and troughs as well as repeated pumping into and out of vats and tanks of various sizes. These operations tend to blend and blend again fairly large quantities of clay, with a resulting increase in uniformity of the product. Blending in the vats is especially helpful in this regard. After the clay has been dried, further blending becomes more difficult and less efficient, so that the clay as it approaches the dewatering operation must show something approximating the desired uniformity if that uniformity is ever to be attained.

After the processing is complete some additional benefit will result from blending of clay in storage. Storage of large enough quantities of clay in piles or bins or preferably in silos will produce a certain degree of blending as the clay is removed from the bottom and the clay at the top changes its position.

Clay consumers who use clay in bags, or those bulk users whose storage space is small, can do little or nothing to help themselves with regard to clay uniformity and must depend entirely upon their supplier. Consumers, on the other hand, who can carry a considerable inventory of bulk clay gain by a certain amount of reblending in storage which will be somewhat dependent upon type of storage space. Thus any remaining variation in individual shipments tends to become equalized.

The fact that sampling methods are important is in itself a tacit admission that uniformity is something short of perfect. If conclusions are to be drawn on laboratory tests on small samples these samples must of course be representative.

* Presented at the meeting of the American Pulp and Paper Mill Superintendents Association, Edgewater Beach Hotel, Chicago, Ill., May 24-26, 1944.

[1] Technical Director, Edgar Bros. Co., Metuchen, N. J.

Operation of Vacuum Pumps On Kraft Paper Machines*

By C. Vicario[1] and C. L. Clark[1]

Abstract

With the present tendency toward higher production, the problem of water removal becomes acute. It is very important to the successful operation of suction boxes that they be of sufficient size and that the piping be of such capacity, that a minimum vacuum can be applied and that there will be no danger of flooding.

A high vacuum may be used at the couch since there will be no wear on the wire.

A suction press is utilized to remove water at the nip and the vacuum required is less than that on the couch.

The function of vacuum pumps on a paper machine is to remove water from the sheet and to dry it up as much as possible before it goes to the steam drier section. The manner in which vacuum is applied depends on the consistency of the sheet as it becomes progressively drier. By far the highest rate of water removal takes place without vacuum on the wire due to the action of gravity and to the effect of the table rolls. The wire length for a machine for any given kind and weight of paper is determined by speed which in turn governs the time allowed for the fibers to properly felt.

The wire length of any existing machine is, of course, fixed and if greater production is desired for a given kind of paper, speed must be increased, thereby reducing the time allowed for felting. To insure good felting, or formation as it is more often called, at the higher speed, the stock must be diluted to a greater extent to allow the fibers to float around more freely and thus secure more even distribution in the reduced space of time.

The statements just made are controversial to some extent, and it is not our purpose to cover the subject of formation. It is true, however, whatever the reason may be, that a far greater rate of water removal must take place at the flat boxes and at the couch as production is increased. This is particularly true of present high speed kraft paper and board machines on which the stock consistency approaching the first flat box has been observed as low as 1.5%. Ten or 12 years ago 2.5 to 4% was a reasonable range.

Suction Box

To take care of this large amount of water, which may be as much as 5000 gallons per minute on a wide machine producing 400 to 500 tons of kraft liner in 24 hours, very wide and deep flat boxes are needed. The connections from the boxes, the separator piping, and the drop legs have to be much larger than ever before. A larger vacuum pump and the resulting higher vacuum is of little help if the number of boxes is not great enough and the size of boxes and the piping is too small. The higher vacuum, which might be produced, consumes more power, but has little effect on water removal if boxes and piping are inadequate to handle the quantity of water. Present practice on a high production kraft machine involves as many as ten, 12-inch wide deep boxes, each with a 10-inch connection. On older machines, which have been speeded up, two or three large boxes have been substituted for the same number of smaller ones located nearest the head box where the quantity of water is greatest. By increasing box and pipe sizes, the extra water can be handled without an increase in vacuum. The pump is often relatively smaller per ton of paper produced than was the case some years ago.

Needless to say, vacuum must be kept as low as possible on the wire boxes to relieve wear. We hear occasionally on kraft machines, which are carrying 10, 12, and even 18 inches vacuum on flat box headers. This merely means that pipes or boxes are too small. The vacuum is measured beyond the boxes, and in the boxes themselves especially at the front side away from the outlet, the vacuum may be only an inch or two of mercury. It will be apparent that when a box becomes flooded, water removal at the back side will be retarded, resulting in uneven drying across the sheet, and high vacuum in the flat box header means nothing.

Let us assume that a sufficient number and size of boxes with adequate separators and drop legs have been provided, so that the water can get away smoothly with about 5 to 6 inches of vacuum at each separator. We can then apply a low vacuum type of Nash pump with a consequent saving in power. The type is known as "K" and consumes from 20 to 30% less power per cubic foot of air handled than the corresponding "L" standard cone type Nash pump. A wide machine making liner at high speed will operate satisfactorily with from 75 to 100 horsepower for ten large boxes. This is no greater power consumption than was used years ago with machines making one half to one third the production. The improvement comes partly from longer wires, partly from a better layout of boxes and piping, and partly from the improved pump efficiency. It might be mentioned here that if the boxes run in a flooded condition due to the boxes being too small or due to the outlets being too small, a fluctuating vacuum results, causing a change of wire speed, resulting in frequent breaks, excessive wire wear, and irregular formation.

Couch

When the paper leaves the last flat box, the consistency has increased to from 8 to 10%, and it must now be subjected to a high vacuum on the suction couch to obtain as much water removal as possible. There is no wear on the wire due to vacuum at the couch as the roll and the wire turn together. Therefore, vacuums close to 20 inches of mercury should be sought for maximum water removal and a minimum of wire slippage. The sheet is drying up, and it is harder work to pull the water away from the

* Presented at the meeting of the American Pulp and Paper Mill Superintendents Association, Edgewater Beach Hotel, Chicago, Ill., May 24-26, 1944.

[1] Nash Engineering Co., South Norwalk, Conn.

fibers, so more pump capacity and more power are needed. Years ago suction couches were provided with suction boxes 7 or 8 inches wide, i.e., the distance between packing strips was 7 to 8 inches. As speeds and tonnages increased, boxes in couch rolls, on kraft machines, particularly, were increased to about 14 inches in width. This nearly doubled the time under vacuum and allowed more water to be removed. Vacuum pump capacity had to be increased to handle the extra area. A wide machine making top production will require 300 to 400 h.p. in vacuum pumps on its suction couch to do the job properly.

More recently, the so-called primary couch has been introduced in a large Southern mill and results as expected are very satisfactory indeed. This primary couch located ahead of the main couch gives additional suction area for water removal without increasing wear on the wire, reducing the necessity of high vacuum on the dry boxes to get very high tonnage.

Press

After passing into the press section of a kraft machine, the sheet is quite dry and little or no additional water can be removed by air infiltration alone. Now water is forced out by mechanical pressure in passing through the nips rather than by the effect of air passing through the paper. The mechanical pressure squeezes the water into the felt, and the vacuum removes this water from the felt and keeps the felt open. A vacuum of from 18 to 20 inches of mercury is desirable and can be produced with the expenditure of 100 h.p. per press on a wide machine. Two suction presses are still most common, although three have been used with good results on one or two machines.

The foregoing remarks illustrate, we believe, the basic laws covering the drying of a sheet of paper or board by vacuum extractions. When the sheet is wringing wet, so to speak, on the wire, water will drain out to a point where the surface tension holds it in the fiber mat. Vacuum applied to the underside causes air to pass through the mat, thus pulling or stripping off still more water. Finally, mechanical pressure is applied to squeeze out as much of the remaining water as possible. The greater the proportion of water to fibers, the more easily the water can be removed. As expected, then, the flat box pump and motor are relatively small. At the couch, the proportion of water is less and a great deal of air capacity and power are needed to dislodge it. At the presses, water is squeezed out, the felts and the suction rolls, with their vacuum pumps merely providing a vehicle to get it away from the nips. The vacuum pumps and their motors are, therefore, smaller than those on the couch.

We hope that this analysis of vacuum extraction will provoke some useful discussion, which may lead to improvement in vacuum pump applications.

Calender Roll Care and Maintenance*

By George A. Thompson, Jr.[1]

Abstract

The care and maintenance of calender rolls requires strict attention if the maximum life is to be expected. Each roll is tailored for the particular job involved and it is essential that it be used in the manner for which it was intended. The roll should be true when installed and proper precautions must be taken in the breaking-in stage to prevent checking. The practice of sanding should not be followed except to cut down the ends when they are too high.

Calendering will not hide defects and satisfactory results will be obtained only if the sheet being processed is uniform.

The need for imparting a smooth finish on paper was noted as early as 1784. In England that year a bole from a sycamore tree was first tried and its shortcomings noted. Metal was tried next and then the same metal roll wrapped with a fabric. From this crude beginning pasteboard compressed on a square wrought iron bar, dried in an oven with subsequent tightening of the heads as the paper shrank, until the required density was achieved next was tried. This was followed by linen paper compressed in much the same way; Linen paper at that time being expensive, cotton cloth was used, to be followed very shortly thereafter by carded cotton. Since that time various mixtures have been experimented with, until today we have rolls made of cotton and cotton mixed with various fibers which are pressed to various densities to produce the best results on various applications.

Primarily, paper is superfinished to impart a finish the manufacturer can not achieve in production. No doubt remains today that the smoothest and most lasting finish is secured best on cotton rolls, pressed to a density no harder than called for by the application.

Care Before Installing

When a roll is received at the shop for refilling, care is taken to obtain its exact measurements. Its surface condition is examined and notation made of any and all injuries.

The making new or refilling of a roll is not haphazard guesswork. Much time is consumed in preparing the filling long before the roll is ready for filling. The filling is then started under expert supervision to assure return delivery of a roll with the proper density and resiliency. When the roll is finally shipped, it has been turned on its centers and ground on its journals until the finished roll, across its entire face and overall dimensions, is true to within 0.001 inch.

Rolls received from the manufacturer should not be held in storage any appreciable length of time. If they must be, they should be rotated on their axis 180° often enough to assure their being true when installed. Even after all these precautions, if some time elapses while in storage, or if the roll is of wide face and has traveled a long distance with the jolts incidental to such a long journey, the roll should be placed in the grinder, set up and indicated. If found out of true, a light cut should be taken across the face before being placed in the stack.

* Presented at the meeting of the American Pulp and Paper Mill Superintendents Association, Edgewater Beach Hotel, Chicago, Ill., May 24-26, 1944.

[1] B. F. Perkins & Son, Inc., Holyoke, Mass.

When placed in the stack for the first time, its direction of rotation should be noted and the roll so marked to assure its being rotated in the same direction throughout its life. This rotation is also carried through when the roll is removed for turning in the lathe and grinding after being pulled for reconditioning.

Checking

Roll checking is the fear of all supercalender men, for the checks necessitate early removal from service. The harder a roll, the worse the checking is when it develops. The danger in making a roll softer to avoid checking is the constant threat that the roll may go to pieces under the heavy nip pressure. For any constant nip pressure, the nearer the roll hardness is to the ideal for that nip pressure, the less tendency there will be to check.

Regardless of the density required on any cotton roll application, a roll without resiliency is useless for all practical purposes. As speed and pressure increase, the temperature in the roll rises. The roll under this increase in temperature tends to soften. This explains in part why the density of a roll should be made for the highest pressure and temperature that has to be encountered and also explains why a roll thus made will not finish or cover as well when used below the maximum required.

Rolls check more frequently on stacks having high nip pressure on plain bearing stacks, when used on too dry papers, and also in mills that skimp on conditioning the roll surface. Checks are a breakdown of the cotton fibers under repeated bending. The sharper the nip, the shorter is the bend in the cotton fiber, thereby concentrating the pressure on a smaller area. The nip varies with the circumference of the intermediate chilled iron rolls. Therefore, rolls should preferably be broken in in the top position to take advantage of the lesser weight and broader nip of the top roll, or in the bottom position to take advantage of the much broader nip in the bottom roll.

Breaking in Rolls

Rolls should be installed with their protective paper wrapping to preclude any oil or grease coming in contact with them.

As is well known, all rolls in the stack, except the bottom roll, revolve by friction. The drive being on the bottom roll, all rolls above are really gears with invisible teeth. This places a terrific strain on a green roll unless precautions are taken to fuse a crust on the immediate outer surface to withstand the friction necessary to drive the roll above it. However smooth a roll is ground, a strong glass discloses many porous irregularities in the surface that must be sealed to assure satisfactory service and long life. To achieve this result the roll should be rotated slowly with a minimum of steady pressure applied preferably through the turnbuckle rather than the weight levers, and water applied sparingly. As the temperature increases, enough water should be added at stated intervals to insure their not being unduly overheated too quickly.

At this point trained observation, based on past experience, is of the utmost value, for at this stage the life of the roll can be materially shortened as well with its probable premature removal from service for reconditioning if the process is unduly hastened. The roll, while in the process of breaking-in, should never become uncomfortably hot to the bare hand until such time as the roll is thoroughly broken in and allowed to assume its normal running temperature.

During this period, varying with the operator, pressure has been increased very gradually and the roll sponged more often as the temperature increased until such time, based on experience, the operator believes the roll is ready for service. The roll has by this time absorbed much water. Allow the roll to run until it is perfectly dry and then follow through by observing these few don'ts:

Don't overwork your stack by running too dry a sheet.
Don't wash down a hot roll with cold water.
Don't ever jog or inch a stack with the weights on.
Don't allow too much surging on the bottom weight levers.
Don't abruptly shut down and go away over the week-end leaving hot rolls exposed to cold air from any open windows.

The drier the paper is run means working the cotton rolls that much harder. The crust on the roll chars and the checking starts immediately beneath. When a cotton roll is removed from service and can be refinished only by grinding to true up the surface, it comes back into service with incipient checks already in the surface. In order to eliminate this hazard the roll should be turned in the lathe, the entire crust removed and a final, slow, fine feed taken across its entire surface. The fiber coming from the roll at this point should be closely observed and any breaks or kinks should be studied with a view to the possibility of a further cut being made if necessary. When once a white, unbroken thread is coming from the cutting tool, all traces of checking have been removed. The importance of this cannot be too highly emphasized.

In this respect it might be said that check marks have been about 90% eliminated by the installation of antifriction bearings.

The time consumed in properly breaking in a roll is an investment. By fusing a proper crust on the immediate outer circumference, one is insured of setting up a good barrier against check marks. A roll properly broken in before paper is allowed to run through the nip will never check unless too scant attention has been paid to the proper moisture content in the sheet, or to a poorly calipered sheet that requires the touching up of the rolls by the operator, thereby uncovering the spot touched up to the ravages of heat and also taking away the finish at this spot.

Sanding

Assuming all filled rolls to be exact to 0.001 inch, and assuming for the moment all chilled iron rolls are also exact to the same tolerance, then why upset perfection by sanding? There is not one among us who can sand a roll or any fractional part of a roll and maintain a uniform caliper of that roll, either across its face or circumferentially.

If shutting down production to sand all rolls is looked upon as necessary—and it is necessary once sanding is accepted as standard practice — then all rolls should be withdrawn from service and properly reconditioned as previously mentioned before being returned to service. At best, sanding should be employed only as an emergency measure and to keep the ends of the filling outside the path of the paper from becoming high.

Conclusion

Supercalendering will not hide any faults in the sheets. It will bring out the faults forcibly and, when this fact is more generally understood and proper steps taken to provide a sheet of uniform caliper, of proper formation and with the correct proportion of moisture content, more satisfactory results will most certainly be obtained.

Stock Preparation Problems Pertaining to Facial Tissue*

By Kurt Wandel[1]

Abstract

The type and speed of the paper machine on which facial tissue is made has a definite bearing on the stock preparation methods to be followed for the best results.

If a cylinder machine is used, the stock may be treated in the beater but with a fourdrinier, a combination of a beater, a refiner, and a jordan is preferred. The reasons for such selections are outlined.

While modern fourdrinier machines make facial tissue at speeds up to 1,500 feet per minute, there are still cylinder machines running the same grade as slow as 300 feet per minute. There are no such variations on any other grade of paper either in machine speed or in the machines themselves. The closest to this difference in production occurs probably on toilet and napkin papers. In both these latter tissues, the quality standards will vary considerable while facial tissue is at least supposed to be of the same quality. Speaking of standards in these days of restricted use of pulp, it must be carried in mind that, today, greater variations in quality are allowed commercially than will be after war restrictions have been lifted.

The Basic Problem

Basically, the problem is to treat the fiber for facial tissue very lightly, sufficiently so to allow it to be formed-in uniformly and have the sheet take on limited strength without allowing it to become harsh. It should be explained right here that a great deal of the ultimate softness of facial tissue comes through the sheet adhering to the drier surface sufficiently well so that its structure is softened up through its resistance to being scraped off by the edge of the creping doctor. The best adhesion to the dried surface may be had in a sheet formed of free stock. Adhesion is not equal in sheets made from any sulphite or soda pulp. The latter, for instance, is not suitable at all except for a part filler stock. Hardwood sulphite has too short a fiber and longfibered sulphite has to be treated too much for proper formation which is apt to make the sheet harsh. Standard grades of northern "hard" bleached sulphite are the best for facial tissue. Alpha pulp was once considered essential for high grade facial tissue on account of its ability to be reduced in beating or jordaning without losing its inherent fiber structure and to still produce a soft tissue, but, alpha pulp is no longer essential for best results.

Machines

The type of paper machine on which facial tissue is made and the speed of the machine have a distinct bearing on the stock preparation methods to be followed for best results. If we consider cylinder machines first, we may presume that they are operated within a range of from 300 to 500 feet per minute and consequently may be furnished with stock prepared in a similar manner. This may best be done in a regular beater equipped with bars at least ½ inch wide and furnished at a medium to low consistency, about 4%. The formation of the sheet on the cylinder mold with free stock is helped by reducing the forming area to a few inches toward the top of the mold before the sheet leaves the stock level. To accomplish this, a slight vacuum is maintained in the cylinder mold. With this arrangement, very little stock preparation is required. In addition to the beater, a slow speed refiner may be used. Jordans are not necessary.

Fourdrinier machines making facial tissue usually are limited in speed on account of formation. If the stock is too free, formation becomes bad or the sheet cannot be picked up and when the stock is slow, the sheet becomes harsh or is hard to crepe uniformly. Slow stock definitely limits the drying capacity of the Yankee drier. The inlet has more to do with limitation of speed than stock preparation. At speeds of from 500 to about 800 feet per minute no particular type of inlet produces outstanding results. Stock preparation is adjusted to best formation and quality of sheet. A combination of beater and slow-speed, broad knife refiner opens up the fiber and with a slight brushing out in a small jordan, will produce best and sometimes very satisfactory results.

It is on the higher machine speeds that a different type of inlet can be used, and vice versa, this different type of inlet accounts for the higher speed. Instead of shooting the stock onto the wire horizontally, the stock is directed toward the wire at an angle of about 30 degrees which contributes to about half the water passing through the wire at once and the balance a short distance beyond. The fiber is forced to form against the wire and is held there until drainage is complete. The higher the speed of the wire, the greater the nozzle velocity or pressure of the stock and the better results in good formation. The stock will have to be treated but little except in a large refiner working in connection with a pulper and chest. The water in the sheet not only drains but evaporates more readily on the drier and contributes to increased drying rates taking care of the increased speed.

Conclusions

It has always been claimed by the author that facial tissue and toilet tissue are first cousins and someday will be made at about the same cost and by the same mills and machines. All signs point to that now. A percentage of groundwood is actually beneficial in facial tissue except for color which also prevents the more extensive use of unbleached sulphite. The makers of toilet tissue can learn a lot from the makers of facial tissue. A little more firmness and any facial tissue becomes the best of toilet tissue. Stock preparation is about the same.

* Presented at the meeting of the American Pulp and Paper Mill Superintendents Association, Edgewater Beach Hotel, Chicago, Ill., May 24-26, 1944.

[1] Member TAPPI; Consulting Engineer, Honey Brook, Pa.

Effect of Chip Length on Quality of Pulp*

By Bruce Suttle[1]

Abstract

A study of the effect of the length of Southern pine chips pulped by the sulphate process on bursting and tearing strength indicated that the yield was greater when chips, 1 to 1½ inches long are used but that ½ inch chips pulp more easily. There is a slight tendency toward greater strength with the larger chips.

The effect of variation in the length of chips used in the manufacture of pulp from Southern pine by the sulphate process has been a matter of divergent opinions among the pulp mill superintendents. The Herty Foundation Laboratory has made a series of twenty cooks, cutting chips to exact length from ¼ inch to 1½ inches in length, with all factors constant except the varying length of the chips. The object of this was to determine the effect of various lengths and the variation of burst and tear strength.

CS Cook No. 1, using ¼-inch chips shows that the burst was as high as when using 1- and 1½-inch chips, e.g. see CS No. 8 and CS No. 12. The yield on 1- and 1½-inch chips was considerably higher.

The permanganate number on CS No. 1 was 14.4; on CS No. 11 7.9; on CS No. 12 21.6; showing that a much softer cooked pulp resulted from the use of ¼-inch chips.

Cook CS No. 1 was much lighter pulp than CS No. 8 or CS No. 12, and the screening was one tenth of 0.1% on CS No. 1, 2.8% on CS No. 8, 3.9% on CS No. 12.

TABLE I.—EFFECT OF CHIP LENGTH ON QUALITY IN SULPHATE PULPING

Constant Factors

Active Alkalinity, 20% Sulphidity, 30%
Cooking Time, Total, 3 hr. Maximum Temperature, 175° C.
Time to Maximum Pressure, 1¾ hrs.
Maximum Steam Pressure, 115 p.s.i.
Time to Maximum Temperature, 1¾ hr.
Beating Time, 65 min.

Cook No.	Chip Size in.	Yield %	Screen %	Burst %	Tear %	Freeness OO.	$KMnO_4$ No.
CS 1	¼	40.8	0.1	145.5	250.5	350	14.4
CS 2	¼	41.0	0.2	144.8	255	360	14.6
CS 3	½	42.0	0.2	150	285	370	15.8
CS 4	½	41.8	0.3	155	290	375	15.6
CS 5	¾	42.5	1.0	148	285	380	16.8
CS 6	¾	42.0	1.2	146	288	390	16.4
CS 7	1	42.6	3.0	142	286	390	18.0
CS 8	1	42.0	2.8	143	280	385	17.9
CS 9	1¼	43.9	3.8	141	275	385	19.4
CS10	1¼	44.0	3.5	140	274	380	19.6
CS11	1½	44.8	4.0	139	270	395	21.0
CS12	1½	45.0	3.9	142	260	385	21.6
CS13	½	42.0	0.3	150	288	375	15.8
CS14	½	42.4	0.2	152	292	370	16.0
CS15	½	42.6	0.4	148	295	380	15.6
CS16	½	42.3	0.2	156	294	375	16.2
CS17	1	43.0	3.0	140	286	390	18.4
CS18	1	43.0	3.0	140	286	390	18.4
CS19	1	43.1	3.8	146	279	408	18.8
CS20	1	43.4	3.4	140	284	405	18.6

A series of eight cooks, four with 1-inch chips and four with 1½-inch chips, keeping all factors constant except the varying length of the chips, showed the burst test averaged about 10 points higher than the 1-inch chips. The tearing resistance was practically the same. The screenings were about 3% lower on the ½-inch chips than on the 1-inch chips.

The pulp stock from the ½-inch chips washed much cleaner and quicker than the 1-inch chips. All stock was screened through 0.009-inch flat screens. Some shives showed up in the pulp from the 1-inch chips. Stock from the ½-inch chips was very clean with practically no shives.

All cooks were made in a ten pilot digester using indirect circulation. Chips were cut from regular mill run of green Southern pines. Logs averaged from 4 to 12 inches in diameter.

All tests were made according to the TAPPI standard methods. Hand sheets were conditioned according to the TAPPI standard T 402 m42 (65% R.H. and 70° F. for 24 hours).

* Presented at the meeting of the American Pulp and Paper Mill Superintendents Association, Edgewater Beach Hotel, Chicago, Ill., May 24-26, 1944.

[1] Herty Foundation Laboratory, 510 West River St., Savannah, Ga.

TAPPI Notes

The Empire State Section of the Technical Association of the Pulp and Paper Industry will meet jointly with the New York-Canadian Division of the Superintendents Association at the Hotel Woodfuff, Watertown, N. Y., on June 23-24, 1944.

A. M. Leth, formerly of the Flintkote Company, is now chemist for Compania de las Fabricas de Papel de San Rafael y Anexas, S. A., Apartado 469, Mexico, D. F., Mexico.

A. O. Bragg has transferred from the Research and Development Department to the Merchandising Department of the Diamond Alkali Company, Pittsburgh, Pa.

W. J. Walker is now a pulp and paper consultant at 209 Pemberton avenue, Plainfield, N. J.

A. V. Alm, formerly of the Chemical Process Company, is now chemical engineer for the American Cyanamid and Chemical Corporation, Stamford, Conn.

John Beaujean is now Tall Oil Plant Superintendent, Union Bag and Paper Corporation, Savannah, Ga.

Martin Jaffe, formerly of the Blandin Paper Company, is now chemist for the National Cellulose Company, Baldwinsville, N. Y.

Niles M. Anderson is now vice president of the Marathon Paper Mills of Canada, Toronto, Ont.

John S. Ware, formerly of the National Sugar Refining Company, is now with General Mills de Brasil, Avenida Rio Branco 311, Rio de Janeiro, Brazil.

Richard M. Morris, Jr., formerly with the Doane Agricultural Service, is now chemist for the Container Corporation of America, Circleville, Ohio.

Crane to Furnish Currency Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., May 31, 1944—Crane & Co. has been awarded the contract for furnishing the Treasury Department about 110,000,000 sheets or 1325 tons of paper for currency at 39 cents and 54,500,000 sheets or 1050 tons of paper for public debts at 28.5 cents.

Crane & Co. was the only bidder and the price is the same as last year.

COMPLETE RECAUSTICIZING PLANTS DESIGNED *and* ENGINEERED *by* DORR

Blueprint Now! FOR TOMORROW'S NEEDS

• We'd like the opportunity to tell you more about it. Meanwhile it's our job to keep our end up—to keep present Dorr installations running smoothly at peak production. If you need help—call on us.

For 20 years Dorr Continuous Recausticizing Systems have been the symbol of trouble-free operation in the production of causticizing liquors for the Pulp and Paper Industry.

Today—based on this 20 years experience we are prepared to do the whole job—to engineer and design *complete* recausticizing plants. Development of flow-sheets and determination of operating costs—engineering design and specifications for construction — purchase of all equipment—and supervision of initial operation — all are our responsibility.

DORR — RESEARCH — ENGINEERING — EQUIPMENT

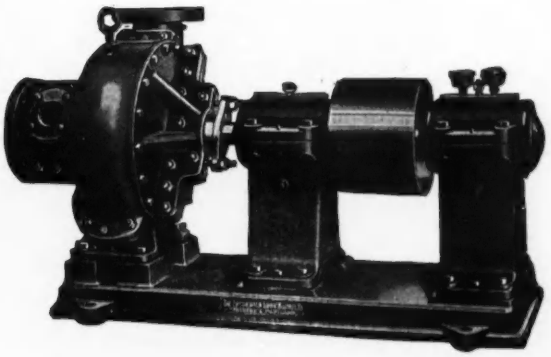
ADDRESS ALL INQUIRIES TO OUR NEAREST OFFICE

DORRCO

THE DORR COMPANY, ENGINEERS

NEW YORK 22, N. Y. 570 Lexington Ave. — CHICAGO 1, ILL. . . . 221 No. LaSalle St.
ATLANTA 3, GA. . . William-Oliver Bldg. — DENVER 2, COLO. . . . . Cooper Building
TORONTO 1, ONT. . 80 Richmond St. W. — LOS ANGELES 14, CAL. . 811 West 7th St.
RESEARCH AND TESTING LABORATORIES . . . . . WESTPORT, CONN.
SUGAR PROCESSING
PETREE & DORR DIVISION . . . . . 570 LEXINGTON AVE., NEW YORK 22

Stock Pumps *individually designed* to meet *your* operating conditions



Actually, there is no such thing as a "stock" FREDERICK Stock Pump . . . there is only a basic design. And, when we engineer your pump, we take into account the nature of the stock, its consistency, the piping layout, and all other factors that enter into your operating conditions . . . and build the pump accordingly.

Consequently, FREDERICK pumps can be GUARANTEED to meet the operating conditions for which they are sold!

You'll find a FREDERICK pump is *the* unit for low cost, high efficiency pumping—sound in construction—dependable in operation—proved by over a quarter century's use by leading paper mills.

FREDERICK PUMPS

Ask about them—

No obligation—

Just write—

The FREDERICK IRON & STEEL CO.
Frederick, Maryland

New York Paper and Pulp Market Review

WPB Reduces U. S. Orders For Thirty-Pound Newsprint—Pulpwood Receipts Up In April—Wood Pulp Output and Inventories Below 1942—Issues Allocation Order M-377 For Paper Stock.

Office of the PAPER TRADE JOURNAL,
Wednesday, May 31, 1944.

The wholesale paper market is concerned regarding the current unfavorable prospects in the future supply of some major paper items for civilian use. Most of many reports from manufacturers' representatives, jobbers, and general paper merchants this week, reflect anxiety as to the trade supply of kraft paper and board. Less paper for the home front is foreseen by the Department of Commerce, despite the currently improved pulpwood receipts which have, at least temporarily, improved the wood pulp supply situation. Increased government requirements for all purposes is given as the basic factor.

Shortage of fiber board cartons and wrapping paper were emphasized by the WPB, at a recent meeting of the Glass Containers Advisory Committee. The glass container industry is the largest purchaser of paper packing materials. Reuse of cartons is being more extensively employed to overcome shortage of new container board, the report states.

Newsprint orders of U. S. publishers for 30-pound newsprint paper will be reduced, the WPB reports. The reduction in June will be the same as in May, or 10% on all orders over 100 tons monthly. This will produce the 8.75% over-all requirements calculated to balance total North American production of newsprint.

Paper production for the week ended May 20 was estimated at 91.6%, compared with 92.2% for 1943, with 93.9% for 1942, with 100.2% for 1941, and with 92.7% for the corresponding week for 1940.

Paper board production for the week ended May 2 was 97.0%, compared with 96.0% for 1943, with 81.0% for 1942 with 85.0% for 1941, and with 93.7% for the corresponding week for 1940.

Pulpwood

Pulpwood receipts by mills for April increased 19.5% over the same month last year, the Pulpwood Consuming Industries Committee reports. Receipts, however, were 6.2% below April 1942. Mill receipts for April aggregated 1,131,473 cords; imports from Canada, 72,183 cords, making a total of 1,203,656 cords.

Wood Pulp

Wood pulp output is expected to reach the 1942 peak in the second half of the current year, the WPB reports. Spring output was substantially reduced by heavy rains in the south. Total U. S. production in March, all grades, was 842,000 tons, compared with 803,000 tons in 1943, and with 951,000 tons in March 1942. Total U. S. mill inventories of wood pulp in March were 383,000 tons, compared with 757,000 tons in 1943, and with 753,000 tons in March 1942.

Rags

Buying of paper-making rags continues active. All grades are in demand at ceiling price levels. Mill demand for old cotton rags is active under steady buying by roofing mills. Prices are firm at ceilings.

Old Rope and Bagging

No change of importance has been reported in the old rope market this week. Mill requirements for No. 1 Manila rope are insistent and all available supplies of this important hard fiber are required for the manufacture of strong papers essential in the conduct of the war.

Trading in scrap bagging continues slow, with no improved volume of business reported this week. Prices are reported as definitely soft and continue nominal.

Old Waste Paper

Mill requirements for all grades of waste paper, chiefly No. 1 mixed No. 1 news, and old corrugated containers, continue most urgent. Prices are strong at ceilings. Demands of the government for all purposes are so large that the War Production Board has issued Order M-377 allocating paper stock to consuming mills. The purpose of this order is to direct the delivery of waste paper at OPA ceiling prices to mills who lack sufficient supplies to maintain essential production.

Twine

No important change in the market situation in twine has been reported this week. Demand is active for all available grades. Prices are firm.

Bagley & Sewall Get Order From Mexico

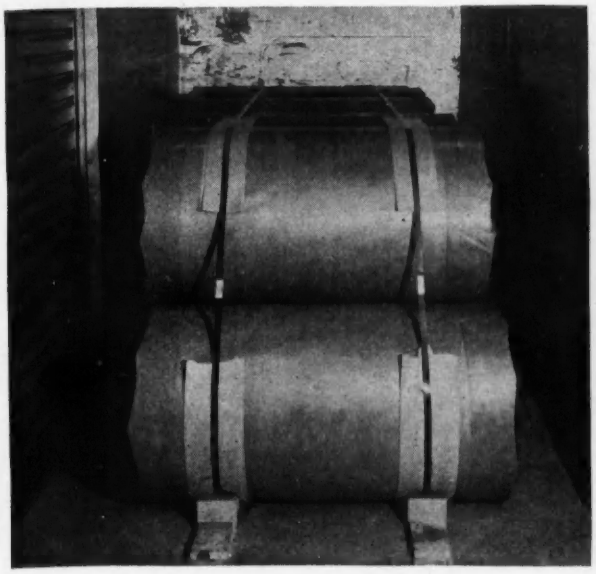
[FROM OUR REGULAR CORRESPONDENT]

WATERTOWN, N. Y., May 29, 1944.—Announcement is made that the Bagley & Sewall Company has received an order for a large Fourdrinier machine for the Cia. de las Fabricas del Papel de San Rafael Y Annexas, S. A., Mexico City, Mex. Construction work has already been started and it is planned to ship the completed machine during the summer months. Receipt of the order was the result of a visit here some time ago by an official of the Mexican concern. Negotiations for the purchase of the machine were started at that time. The new machine will replace two old machines at the company's El Pragreso mill and it is understood that it will have a width of 110 inches.

Suggestions Program Big Success

Employee suggestions at the Kimberly-Clark Lakeview mill at Neenah, Wis., skyrocketed from one in the first four months of last year to 85 in the same period this year by the revitalization of the suggestion program through making it one of the requirements for the feminine workers who are members of the Women in Production Service organization.

Wips who wear the red, white and blue plastic bar of Wips senior lieutenant must make suggestions and have them accepted as part of the qualifications for this advancement in rank. The central committee, in adding suggestions as a requirement for advancement, recognized the need for suggestions that would save materials and time, and make for greater safety, particularly in wartime.



Prevent Damage in Transit to Paper with STANLEY STEEL STRAPPING

There's no paper to spare these days for needless waste caused by damage in transit. Make sure your shipments arrive as they left the mill . . . end troublesome claims and replacements . . . give the proved protection of Stanley Steel Strapping and Car Banding.

Quickly applied to skids, rolls, cases, or cartons, Stanley Steel Strapping speeds output, saves man-hours in the shipping room. It provides dependable reinforcement to withstand long trips and rough handling by overburdened carriers, reduces tare weight and bulk, saves valuable cargo space, conserves packing materials.

Stanley Car Banding lowers bracing costs, replaces heavy, bulky, wood bracing, saves loading and unloading time, reduces demurrage charges.

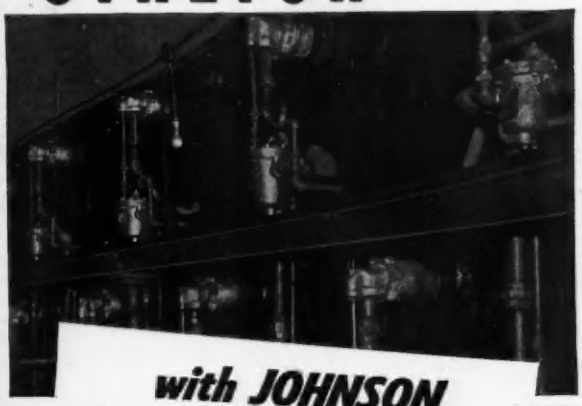
The Stanley Steel Strapping and Car Banding Systems include tools, reels, and accessories for preparing every type of shipment. Write for complete information. The Stanley Works, Steel Strapping Div., New Britain, Conn.

PROMPT SHIPMENTS to War Production Plants

STANLEY
TRADE MARK

STANLEY
STEEL STRAPPING AND
CAR BANDING SYSTEMS

STRETCH MAN HOURS



with JOHNSON Rotary Pressure Joints

WHEN you're looking for ways to ease today's "Help Wanted" problem, it will pay to check into your stuffing boxes or steam fits. They demand a lot of care and attention—for inspecting, servicing and, too frequently, for replacing parts worn rapidly by misalignment.

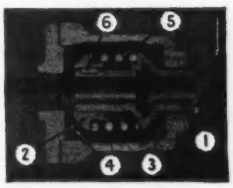
With Johnson Rotary Pressure Joints you save these precious hours of labor for more productive work, because the Johnson Joint is completely packless, self-oiling, self-adjusting and even self-aligning. You save also the production time that is wasted when machines are shut down for stuffing box repair. And with the Johnson Joint you have a simpler, easier way to provide modern, more efficient methods of syphon roll drainage.

For today's big task these production boosting benefits of the Johnson Joint are of first importance. Don't overlook, however, the savings in dollars and cents—in reduced maintenance and longer life—which can quickly pay the cost of change-over. Make that your final reason for joining the hundreds of Johnson Joint users.

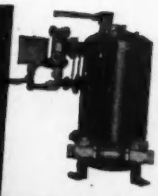
TODAY'S WAY TO SAVE TIME AND TROUBLE

● Nipple (1) fastened to roll. Sliding collar (2) keyed to nipple. Carbon graphite seal ring (3) and bearing ring (4) which eliminate oiling and packing. Spring (5) is for initial seating only; joint is actually pressure sealed when in operation.

Write for full information



KNOW THE JOHNSON ELECTRAP



Today's highest development in a trap for pumping or lifting service, and for draining vacuum lines under vacuum as complete as 27" of mercury. Electric control makes operation as dependable as flow of electricity; there are no floats or stuffing boxes—no moving parts of any kind on trap chamber. Control valve gear is one compact assembly—can be mounted in any convenient location if trap chamber must be set in inaccessible position. Ask for bulletin.

The Johnson Corporation
828 WOOD STREET THREE RIVERS, MICH.

MISCELLANEOUS MARKETS

Office of the PAPER TRADE JOURNAL,
Wednesday, May 31, 1944.

BLANC FIXE—Quotations on blanc fixe continue firm and unchanged. Demand is reported fair. The pulp is currently quoted at $40 per ton, in barrels, at works; the powder is quoted at $60 per ton, f.o.b. works.

BLEACHING POWDER—Current demand is active but supply is adequate. Quotations are unchanged. Prices on bleaching powder range from $2.50 to $3.10 per 100 pounds, in drums, car lots, at works.

CASEIN—OPA maximum prices on processed acid-precipitated casein are as follows: 10,000 pounds or more, 24 cents per pounds; 2,000 pounds, 24½ cents per pound; less than 2,000 pounds, 24¾ cents per pound, f.o.b. shipping point.

CAUSTIC SODA—Demand continues heavy. Market definitely tight. Prices are unchanged. Solid caustic soda is quoted at $2.30 per 100 pounds; flake and ground is quoted at $2.70 per 100 pounds; all in drums, car lots, at works.

CHINA CLAY — Quotations on china clay are unchanged. Current demand is reported fair. Domestic filler clay is currently quoted at from $7.50 to $15 per ton; coating clay is quoted at from $12 to $22 per ton, at mine. Imported clay is quoted at from $13 to $25 per long ton, ship side.

CHLORINE—Demand reported heavier and less allocated to paper industry. Quotations are unchanged. Chlorine is currently quoted at $1.75 per 100 pounds, in single unit tank cars, f.o.b. works.

ROSIN—Prices on some grades are higher for the current week. "G" gum rosin is quoted at $5.12 per 100 pounds, in barrels, Savannah. "FF" wood rosin is quoted at $5.12 per 100 pounds, in barrels, New York. Seventy per cent gum rosin size is currently quoted at $5.39 per 100 pounds, f.o.b. works.

SALT CAKE—Prices on salt cake are reported unchanged for the current week. Use in paper industry at low level. Domestic salt cake is quoted at $15 per ton, in bulk. Chrome salt cake is quoted at $16 per ton. All prices in car lots, f.o.b. shipping point.

SODA ASH—Heavy demand continues for domestic requirements and market is still tight. Quotations continue unchanged. Current prices, car lots, per 100 pounds, are as follows: in bulk, $.90; in paper bags, $1.05; and in barrels, $1.35.

STARCH—Larger shipments of corn are reported this week but critical market situation in corn and its products continues. Quotations unchanged. The pearl grade is quoted at $3.72 per 100 pounds; powdered starch at $3.83 per 100 pounds; all prices in bags, car lots, f.o.b. Chicago.

SULPHATE OF ALUMINA — Demand reported active. Quotations continue unchanged. The commercial grades are quoted at from $1.15 to $1.25 per 100 pounds, in bags, car lots, f.o.b. works. The iron free is quoted at $2.35 per 100 pounds, in bags, at works.

SULPHUR—Quotations on sulphur continue to conform to prevailing market prices. Annual contracts are quoted at $16 per long ton, f.o.b. mines; the price at Gulf Ports is $17.50 per long ton.

TALC—Prices on talc continue unchanged. Demand moderate. Domestic grades are currently quoted at from $16 to $21 per ton, at mines; Canadian at $24 per ton. All prices in car lots.

MARKET QUOTATIONS

All market quotations, excepting those otherwise designated as official OPA maximum prices, are based on the manufacturers' price level as of October 1-15, 1941; maximum wholesale prices are based on the merchants' maximum prices for stipulated quantities at a quoted price to all customers of a like class, as shown by the merchant's sales records of goods delivered during March, 1942. A merchant's price list in effect in March 1942, showing quotations of actual shipments, will establish the current maximum prices.

Paper

(Delivered New York)

Standard News, per ton—

Roll, contract...	*$58.00	@	—
Sheets	66.00	"	—

* OPA Maximum Price.

Kraft—per cwt.—Carload Quantities Zone A, f.o.b. Mill

Superstandard Wrapping	*$5.25	@	—
No. 1 Wrapping...	*5.00	"	—
Standard Wrapping	*4.75	"	—
Standard Bag.....	*4.375	"	—

* OPA Manufacturers' Prices.

Tissues—Per Ream—Carlots

White No. 1.....	1.12½	"	—
White No. 1 M. G.	1.10	"	—
White No. 1½....	1.00	"	—
White No. 2.....	.90	"	—
Anti-Tarnish M.F..	1.20	"	—
Colored	—	"	—
Kraft	.95	"	—
Manila	.90	"	—

Toilet—1 M. Sheets—Per Case

Unbleached	4.25	"	—
Bleached	5.70	"	—
Unbl. Toilet, 1 M.	4.16	"	—
Bleached Toilet...	5.70	"	—

Paper Towels, Per Case—

Unbleached, Jr.....	2.20	"	—
Bleached, Jr.....	3.20	"	—

Manila—per cwt.—C. l. f. a.

No. 1 Jute.....11.25		@	—
No. 1 Manila Wrapping, 35 lb.....	6.00	"	6.25
No. 2 Manila Wrapping, 35 lb.....	5.75	"	6.00

Boards, per ton—

News	*$48.00	@	-
Chip	*48.00	"	—
Sgl. Mla. Ll. Chip	*60.00	"	—
White Pat. Coated	*75.00	"	—
Kraft Liners 50 lb.	*63.00	"	—
Binders Boards....	84.00	"	116.00

* OPA Base Prices per 10 tons. Less than 10 tons but over 3 tons, add $2.50; three tons or less, add $5; regular 35-39 basis, add $5.; basis 40-49, add $2.50; basis 91-100, add $2.50; basis 101-120, add $5.

The following are representative of distributors' resale prices:

Rag Content Bonds and Ledgers—White, Assorted Items, Delivered in Zone 1:

	Bonds		Ledgers	
100% Rag Ext. No. 1	$39.10	@$46.00	$40.25	@$47.25
100% Rag	32.20	" 37.75	33.35	" 39.25
85% Rag	....	"	29.90	" 35.00
75% Rag	23.00	" 27.00	24.15	" 28.25
65% Rag	....	"	22.80	" 27.75
50% Rag	18.70	" 22.75	19.90	" 24.25
25% Rag	16.40	" 20.00	17.55	" 21.50

Colors at $1.00 cwt. extra.

Sulphite Bonds and Ledgers—White, Assorted Items. Delivered in Zone 1:

	Bonds		Ledgers	
No. 1..	$10.55	@$12.75	$11.70	@$14.25
No. 2..	9.65	" 11.75	10.80	" 13.25
No. 3..	9.20	" 11.25	10.35	" 12.50
No. 4..	8.90	" 10.75	10.05	" 12.25

Colors $1.00 cwt. extra.

Free Sheet Book Papers—White, Cased Paper. Delivered in Zone 1:

No. 1 Glossy Coated...	$13.65	@	$13.50
No. 2 Glossy Coated...	12.40	"	14.00
No. 3 Glossy Coated...	11.60	"	13.25
No. 4 Glossy Coated...	11.15	"	12.75
No. 1 Antique (watermarked)	10.25	"	11.75
No. 2 Offset.....	9.60	"	11.00
A Grade E. F.....	9.35	"	10.75
A Grade S. & S. C....	9.60	"	11.00
B Grade E. F.....	8.85	"	10.25
B Grade S. & S. C....	9.10	"	10.50
C Grade E. F.....	8.55	"	9.75
C Grade S. & S. C....	8.80	"	10.00
D Grade E. F.....	8.25	"	9.50
D Grade S. & S. C....	8.50	"	9.75

Ivory & India at $.50 cwt. extra.

Wood Pulp

OPA Maximum Prices and Canadian Manufacturers Prices, Less Freight, Not Exceeding OPA Allowances.

Bl. Softwood Sulphite.....	$86.00
Unbl. Softwood Sulphite.....	74.00
Bl. Hardwood Sulphite.....	83.50
Unbl. Hardwood Sulphite.....	71.50
Bl. Mitscherlich.....	81.00
Unbl. Mitscherlich .... 72.00 @	82.00
N. Bleached Sulphate.....	86.00
S. Bleached Sulphate.....	79.00
N. Semi-Bleached Sulphate...	82.00
S. Semi-Bleached Sulphate....	75.00
N. Unbl. Sulphate.....	73.00
S. Unbl. Sulphate.....	63.50
Bl. Soda	72.00
Unbl. Soda	68.00
Groundwood	50.00

Transportation Allowances

Applying to Producers of Wet Wood Pulp.

	Below 50% Air Dry Weight
Northeast	$13.50
Lake Central	13.50
Southern	16.00
West Coast (in area).....	10.50
West Coast (out area).....	16.50

	50%-80% Air Dry Weight
Northeast	$11.50
Lake Central	11.50
Southern	14.00
West Coast (in area).....	9.50
West Coast (out area).....	15.50

Applying to Producers of Dry Wood Pulp.

	Above 80% Air Dry Weight
Northeast	$8.50
Lake Central	8.50
Southern	11.00
West Coast (in area).....	7.50
West Coast (out area).....	13.50

Should freight charges actually exceed these allowances, the difference may be added to the maximum prices

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

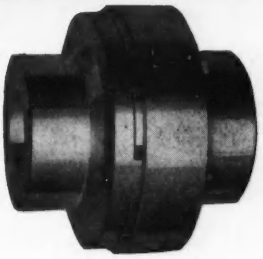
Shirt Cuttings— New White, No. 1..	6.50	@	7.25*
Silesias No. 1.....	—	"	5.75*
New Unbleached...	6.75	"	7.50*
Blue Overall.....	—	"	5.50*
Fancy	—	"	3.50*
Washables	—	"	3.00*
Bleached Khaki Cuttings	—	"	4.25*
Unbleached Khaki Cuttings	—	"	3.50*

* OPA Maximum Prices.

Protect Pulp and Paper Mill *Power*

L-R FLEXIBLE COUPLINGS

L-R TYPE "H" can be especially recommended to safeguard pulp and paper mill power transmission against its particular enemies: Misalignment — Overheating — Moisture — Vibration. Resilient free-floating load cushions are heat and moisture resistant. Electric steel castings and greater number of jaws give far greater load capacity. Duties from 4.60 to 806 h.p. at 100 R.P.M. Noiseless. Require no lubrication.



Pat. & Pats. Pend.

SEND FOR L-R CATALOG AND SELECTOR CHARTS

Illustrates and describes L-R non-lubricated couplings for all services, 1/6 to 2500 h.p. Many types have interchangeable load cushions, always in sight. Cushions may be changed without tearing down the coupling or moving machinery. Free Selector Charts for quick finding of your needs. Wire or write

LOVEJOY FLEXIBLE COUPLING CO. 4946 WEST LAKE ST. CHICAGO 44, ILL.

Cleaning Methods and Short Cuts

Every paper mill has many cleaning problems, on which plenty of time and labor must be spent. There are time-tested short-cuts and improved methods and materials for:

Slime Control
Felt Reconditioning
Improved Flocculation and Formation
Suction Roll Cleaning
Salvage Cleaning

and many another cleaning operation, which you can easily use in your plant.

They are all covered in the Magnus Paper Mill Cleaning Handbook, a copy of which we will be glad to send you.

WRITE FOR A COPY

Or, if you wish, for as many copies as you feel you'd like to have for distribution among the men interested in faster, better cleaning in your mill.

MAGNUS CHEMICAL COMPANY
24 SOUTH AVENUE GARWOOD, N. J.
Representatives in Principal Cities

Magnus PAPER MILL CLEANERS

Old Rags

White, No. 1—			
Repacked	*3.80	"	—
Miscellaneous	*3.20	"	—
White, No. 2—			
Repacked	*2.90	"	—
Miscellaneous	*2.65	"	—
Third and Blues—			
Repacked	*2.20	"	—
Miscellaneous	*1.80	"	—
Roofing Rags—			
No. 1	*1.55	"	—
No. 2	*1.45	"	—
No. 3 (bagging)	*1.35	"	—
No. 4	*1.35	"	—
No. 5A	*1.35	"	—
Old Manila Rope	5.75	"	—

OPA Maximum Prices.

Foreign Rags

All Prices nominal

New Rags

New Dark Cuttings	2.25	@	2.40
New Mixed Cuttings	2.00	"	2.20
New Light Silesias	5.50	"	5.75
Light Flannelettes	5.50	"	5.75
New White Cuttings	7.00	"	7.50
New Light Oxfords	4.00	"	4.50
New Light Prints	3.00	"	3.25

Old Rags

No. 1 White Linens	7.50	"	8.50
No. 2 White Linens	6.50	"	7.50
No. 3 White Linens	4.50	"	—
No. 4 White Linens	2.25	"	3.25
No. 1 White Cotton	4.25	"	4.75
No. 2 White Cotton	3.25	"	3.75
No. 3 White Cotton	2.50	"	3.00
No. 4 White Cotton	1.90	"	2.20
Extra Light Prints	2.00	"	2.40
Ord. Light Prints	1.75	"	2.15
Med. Light Prints	1.55	"	1.95
Dutch Blue Cottons	2.25	"	2.50
French Blue Linens	3.00	"	—
Checks and Blues	2.00	"	—
Linsey Garments	1.90	"	2.00
Dark Cottons	1.50	"	1.60
Old Shopperies	1.30	"	1.45
New Shopperies	1.45	"	1.50
French Blues	2.25	"	2.50

BAGGING

(Prices to Mill, f. o. b. N. Y.)

Gunny No. 1—			
Foreign	Nominal		
Domestic	4.25	@	4.35
Wool Tares, light	4.25	"	4.50
Wool Tares heavy	4.50	"	5.00
Bright Bagging	4.50	"	4.85
Manila Rope—			
Foreign	—	"	—
Domestic	*5.75	"	—
Jute Threads	5.50	"	—
No. 1 Sisal Strings	*4.00	"	—
Mixed Strings	2.00	"	—

* OPA Maximum Price.

Old Waste Papers

(F. o. b. New York)

OPA Maximum Prices

No. 1 Hard White Envelope Cuts, one cut	3.37½	@	—
No. 1 Hard White Envelope Cuts	3.12½	"	—
No. 1 Hard White Shavings, unruled	2.87½	"	—
No. 1 Hard White Shavings, ruled	2.50	"	—
Soft White Shavings, one cut	2.87½	"	—
No. 1 Soft White Shavings	2.50	"	—
Soft White Shavings, Misc.	2.15	"	—
No. 1 Fly Leaf Shavings	1.67½	"	—
No. 2 Fly Leaf Shavings	1.12½	"	—
No. 1 Groundwood Fly Leaf Shavings	1.25	"	—
No. 2 Mixed Groundwood Fly Leaf Shavings	.90	"	—
Mixed Colored Shavings	.75	"	—
Mixed Groundwood Colored Shavings	.90	"	—
Overissue Magazines	1.67½	"	—
No. 1 Heavy Books & Magazines	1.67½	"	—
Mixed Books	.85	"	—
No. 1 White Ledger	2.17½	"	—
No. 2 Mixed Ledger, colored	1.87½	"	—
New Manila Envelope Cuttings, one cut	2.87½	"	—
New Manila Envelope Cuttings	2.65	"	—
Extra Manilas	1.85	"	—
Mixed Kraft, Env. & Bag Cuttings	2.75	"	—
Kraft Envelope Cuttings	3.25	"	—
Triple Sorted, No. 1 Brown Soft Kraft	2.50	"	—
New 100% Kraft Corrugated Cuttings	2.25	"	—
No. 1 Assorted Old Kraft	1.75	"	—
New Jute Corrugated Cuttings	.90	"	—
Old 100% Kraft Corrugated Containers	1.75	"	—
Old Corrugated Containers	1.15	"	—
Box Board Cuttings	.72½	"	—
White Blank News	1.65	"	—
Overissue News	.85	"	—
No. 1 News	.75	"	—
No. 1 Mixed Paper	.70	"	—
Old Corrugated Containers	.82½	"	—
Mill Wrappers	.85	"	—

Twines

All Prices Nominal

(F. o. b. Mill)

(Soft Fiber)

Coarse Polished—			
India	.21	@	—
White Hemp	.21	"	—
Fine Polished—			
Fine India	.36	"	—
Unpolished—			
Box	.17½	"	—
Paper Makers	.17	"	—
Tube Rope	.19	"	—
Wall Paper	.20½	"	—
Wrapping	.23	"	—
Soft Fiber Rope	.19	"	—
Cotton	.25	"	—

(Hard Fiber)

Medium Java	.18	"	—
Mex. Sisal	.16	"	—
Manila	—	"	—

PHILADELPHIA

Domestic Rags (New)

(Price to Mill.)

Shirt Cuttings—	
New White No. 1	.07¼
New White No. 2	.05¾
Light Silesias	.05¾
Black Silesias, soft	.03¾
New Unbleached	.07½
Washable Prints	.04¼
Washable No. 1	.03
Blue Overall	.05½
Cottons—According to grades—	
Washable shredding	.01¾
Fancy Percales	.04¾
New Black Soft	.03¼
Khaki Cuttings—	
Unbleachable Cotton Cuttings	.03½
Bleachable Cotton Cuttings	.04¼
Men's Corduroy	.03½
Ladies' Corduroy	.03
Cottonades	.03¼

Domestic Rags (Old)

White No. 1—Repacked	3.80	"	—
Miscellaneous No. 1	3.20	"	—
Miscellaneous No. 2	2.65	"	—
White No. 2—Repacked	2.90	"	—
Thirds and Blues—			
Miscellaneous	1.80	"	—
Repacked	2.20	"	—
Black Stockings—			
(Export)	Nominal		
Roofing Stock—			
Foreign No. 1	Nominal		
Domestic No. 1	1.55	"	—
Domestic No. 2	1.45	"	—
Roofing Bagging	1.35	"	—
Old Manila Rope	5.75	"	—

Bagging

(F. o. b. Phila.)

Gunny No. 1—			
Foreign	Nominal		
Domestic	3.00	"	3.50
No. 1 Clean bright—			
Sisal Strings			.04
No. 2 Clean bright—			
Sisal Strings			.03
Sisal Jute	.02½	"	.02¾
Scrap—			
No. 1	2.25	"	2.50
No. 2	1.75	"	1.80
Wool Tares hea	4.00	"	4.25
No. 1 New Light Burlap	3.00	"	4.00
New Burlap Cuttings	3.75	"	4.00

Old Papers

(F. o. b. Phila)

OPA Maximum Prices

No. 1 Hard White Envelope Cuts, one cut	3.37½	"	—
No. 1 Hard White Shavings, unruled	2.87½	"	—
Soft White Shavings, one cut	2.50	"	—
White Blank News	1.65	"	—
Soft White Shavings, Misc.	2.13	"	—
No. 1 White Ledger	2.17½	"	—
No. 2 Ledger, colored	1.87½	"	—
No. 1 Heavy Books & Magazines	1.67½	"	—
Overissue Magazines	1.67½	"	—
New Manila Envelope Cuttings	2.65	"	—
No. 1 Assorted Old Kraft	1.75	"	—
No. 1 Mixed Paper	.70	"	—
Box Board Cuttings	.72½	"	—
Kraft Corrugated Cuttings	2.25	"	—
Old Corrugated Containers	1.15	"	—
Overissue News	.85	"	—
No. 1 News	1.00	"	—

BOSTON

Old Papers

(F. o. b. Boston)

OPA Maximum Prices

No. 1 Hard White Shavings, unruled	2.87½	@	—
No. 1 Hard White Shavings, ruled	2.50	"	—
Soft White Shavings, Misc.	2.15	"	—
No. 1 Fly Leaf Shavings	1.67½	"	—
No. 2 Fly Leaf Shavings	1.12½	"	—
No. 1 Groundwood Fly Leaf Shavings	1.25	"	—
No. 2 Groundwood Fly Leaf Shavings	.90	"	—
Mixed Colored Shavings	.75	"	—
New Manila Envelope Cuts, one cut	2.87½	"	—
Hard White Envelope Cuts, one cut	3.37½	"	—
Triple Sorted No. 1 Brown Soft Kraft	2.50	"	—
Mixed Kraft Env. & Bag Cuttings	2.75	"	—
Kraft Envelope Cuttings	3.25	"	—
No. 1 Heavy Books & Magazines	1.67½	"	—
New Manila Envelope Cuts, one cut	2.87½	"	—
New Manila Envelope Cuttings	2.65	"	—
White and Colored Tabulating Cards	2.25	"	—
Ground Wood Tabulating Cards	1.35	"	—
White Blank News	1.65	"	—
No. 1 Assorted Old Kraft	1.75	"	—
No. 1 Mixed Paper	.70	"	—
Overissue News	.85	"	—
Box Board Cuttings	.72½	"	—
New Corrugated Cuttings, Kraft	2.25	"	—
Old 100% Kraft Corrugated Containers	1.75	"	—
Old Corrugated Containers	1.15	"	—
Jute Corrugated Cuttings	1.07½	"	—

Bagging

(F. o. b. Boston)

Gunny Bagging—			
Foreign	(nominal)		
Domestic	—	@	2.75
Sisal Rope No. 1	*4.75	"	
Sisal Rope No. 2	*4.25	"	
Mixed Rope	—	"	1.55
Transmission Rope—			
Foreign	(nominal)		
Domestic	2.75	"	3.00
Manila Rope—			
Foreign	(nominal)		
Domestic	5.75	"	—
Soft Jute Rope	5.25	"	—
Jute Cer Threads	3.00	"	3.50
Bleachery Burlap	8.50	"	9.00
Scrap Burlap—			
Foreign	(nominal)		
Domestic	—	"	2.50
South American	—	"	3.00
Wool Tares—			
Foreign	(nominal)		
Domestic	4.25	"	
Aust. Wool Pouches	—	"	3.25
New Zealand Wool Pouches	—	"	3.50
New Burlap Cuttings	4.75	"	
Heavy Baling Bagging	4.00	"	4.25
Paper Mill Bagging	2.50	"	3.00
No. 2 Roofing Bagging	1.35	"	—

* OPA Maximum Price.

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints	.04½	@	.04¾
Fancy Percales	.04¼	"	.05
New White No 1	.06¾	"	.07
New Light Flannelettes	.05¼	"	.05½
Canton Flannels, Bleached	.06	"	.06¼
Underwear Cutters, Bleached	.06¼	"	.06¾
Underwear Cutters, Unbleached	.05¼	"	.06
Silesias No. 1	.06	"	.06¼
New Black Silesias	.03	"	.03½
Red Cotton Cuttings	.03½	"	.04
Soft Unbleached	.06½	"	.06¾
Blue Cheviots	.05½	"	.06
Fancy	.02¾	"	—
Washable	.02¾	"	—
Khaki Cuttings	.02¾	"	.03
O. D. Khaki	.03½	"	.03¾
Corduroy	.03¼	"	.03
New Canvas	.06¼	"	.06¾
B. V. D. Cuttings	.06¼	"	.06¾

Domestic Rags (Old)

(F. o. b. Boston)

White No. 1—			
Repacked	3.80	@	—
Miscellaneous	3.20	"	—
White No. 2—			
Miscellaneous	2.65	"	
Twos and Blues, Repacked	2.20	"	—
Old Blue Overalls	2.25	"	2.50
Thirds and Blues, Repacked	2.20	"	—
Miscellaneous	1.80	"	—
Black Stockings	3.50	"	4.00
Roofing Stock—			
No. 1	1.55	"	—
No. 2	1.45	"	—
No. 3	1.35	"	—
No. 4	1.35	"	—
No. 5, Quality A	1.35	"	—
Quality B	1.20	"	—
Quality C	.95	"	—
Old Manila Rope	5.75	"	—

* OPA Maximum Prices.

Foreign Rags

(F. o. b Boston)

Canvas	(nominal)
Dark Cottons	(nominal)
Dutch Blues	(nominal)
New Checks and Blues	(nominal)
Old Fustians	(nominal)
Old Linsey Garments	(nominal)
New Silesias	(nominal)

CHICAGO

Waste Paper

(F. o. b. Chicago)

OPA Maximum Prices

Shavings—			
No. 1 Hard White Envelope Cuts, one cut	3.37½	"	—
No. 1 Hard White Shavings, unruled	2.87½	"	—
No. 1 Soft White Shavings	2.50	"	—
No. 1 White Ledger	2.17½	"	
No. 1 Heavy Books & Magazines	1.67½	"	—
White Blank News	1.65	"	—
Mixed Kraft Env. & Bag Cuttings	2.75	"	—
No. 1 Assorted Old Kraft	1.75	"	
Overissue News	.85	"	—
No. 1 News	.75	"	—
No. 1 Mixed Paper	.70	"	—
No. 1 Roofing Rags	1.55	"	—
No. 1 Roofing Bags	1.45	"	—